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ABSTRACT

Designed as a forum for the exchange of information among members of the National Council for Research and Planning (NCRP), this journal provides articles on various aspects of community college research, management, and planning. The two issues of volume 6 contain the following articles: (1) "The President's Forum: What Have We Accomplished?" by the NCRP's president, John Losak; (2) "An Analysis of Course Withdrawals at a Rural Community College in Florida," by Donald A. Dellow, Cordelia Douzenis, and Steven M. Ross; (3) "Assessment in Tennessee Community and Technical Colleges," by H. James Owen; (4) "Enrollment Projections: Template and Guide," by George L. Findlen; (5) "Proving What We Are Doing Is Working: The Student Flow Research Model," by Janis Cox Coffey; (6) "Using Research to Stimulate Local Initiative for Economic Development," by P. Anthony Zeiss; (7) "Recent Research on Community College Developmental/Remedial Programs: An ERIC Report," by Diane Zwemer; (8) "The Myths and Realities of Planning," by G. Jeremiah Ryan; (9) "A Study of Former Students: Dropouts or Stopouts?" by Harriott Calhoun and Tammie Brown; (10) "Predicting Training Success in a Customized Industry Project," by Jerry Moorman and P. Anthony Zeiss; (11) "Towards a New Perspective on Community College Involvement in Economic Development," by Stephen G. Katsinas and Vincent A. Lacey; (12) "MIS in California Community Colleges: Shared Governance or State Control?" by Janis Cox Coffey and William B. Hamre; (13) "Evaluating College Remedial/Developmental Programs: Results of a Cooperative Effort among Community Colleges," by Trudy Bers; (14) "Faster and More Accurate Catalog Changes," by George L. Findlen; and (15) "Research of Enrollment Influences at Community Colleges: An ERIC Report," by Mary Hardy. (JMC)

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Community College Journal For Research and Planning
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PRESIDENT'S FORUM

WHAT HAVE WE ACCOMPLISHED?

John Losak

A number of events have occurred during the past year to move NCRP forward in the role of a growing professional organization and as a contributing component of AACJC. There has been a significant increase in membership during the past year. Many of our members are now becoming more involved in council activities.

In addition to the publications of a refereed journal and a quarterly Newsletter, the organization has supported a nationwide survey of institutional practices in the community college, conducted as part of a dissertation. NCRP has engaged in several professional activities, with each leading to the further development of skills and resources of the Association.

The NCRP Executive Committee contracted with Sussex County Community College District in New Jersey to provide consultation services with respect to long range planning. Work is virtually complete on this project and it appears to have been of benefit to the college and has set the stage for NCRP to increase its efforts in this direction.

Also continuing is an advisory group organized to identify exemplary practices in community college research. Members include: B.A. Acevedo, Consultant to the Chancellor, Dallas County Community College; Arthur Cohen, Director, ERIC Clearinghouse for Junior Colleges; Don Doucette, Associate Director, League for Innovation in the Community Colleges; Mary Ellen Duncan, Dean of Development, Tri-County Technical College; Barbara Holmes, Provost, Annandale Campus, Northern Virginia Community College; James Gollattscheck, Executive Vice President, AACJC; Richard Miller, Higher Education Program, Ohio University; Don Savage, Vice President for Communication, AACJC; George Vaughn, President, Piedmont Virginia Community College; and Tony Zeiss, President, Pueblo Community College. The group's next meeting is scheduled for November 5 and 6 in Washington, D.C. Don Doucette, as your new NCRP President, will continue to keep you informed as to the progress made by this group.

My tenure as NCRP President was complete with the beginning of the Council's New Year, July 1. I must say that the cooperation of the Executive Committee made the additional responsibilities incumbent with the position an easy and rewarding experience. Membership has increased in excess of 50 percent during the year, thanks largely to the efforts of the Executive Committee and especially to Claire Karr for her untiring efforts in our recent membership campaign. Dr. Edith Carter

continues to serve the organization well in many ways, especially through her editorial efforts with the Journal.

Institutional research in the community college has changed dramatically during the last decade. We now have fewer offices devoted exclusively to reporting efforts and much more effort being manifest in action research. It would also appear that the findings from this research are being used to impact decision making; witness the ERIC documents being derived from institutional research efforts, the increase in journal publications and the myriad of national meetings at which presentations by institutional research personnel are prominent.

NCRP, I believe, can play an even more expanding role in the coalescence of these professional endeavors through the meaningful exchange of ideas and contributions to developing institutions. I also believe that these evolving roles for NCRP will be furthered during the tenure of our new officers, Dr. Don Doucette, President; Dr. Edith Carter, President Elect, and Dr. Jeff Seybert, Secretary-Treasurer. I am sure that you will join me in not only wishing them well, but in standing ready to support their requests for professional contributions during the coming year.

JOHN LOSAK is Dean of Institutional Research at Miami-Dade Community College, Miami, Florida 33176. His term as President of the National Council for Research and Planning was for the year 1986-87.

Community College Journal for Research and Planning
Volume 6, Number 1

AN ANALYSIS OF COURSE WITHDRAWALS AT A RURAL COMMUNITY COLLEGE IN FLORIDA

Donald A. Dellow, Cordelia Douzenis and Steven M. Ross

Student retention has become a major concern for college administrators and faculty members in the 1980s. Almost every college in the country now has at least one committee seeking ways to prevent students from becoming attrition statistics. A significant body of research has emerged dealing with the characteristics of students who drop out of college permanently or "stop-out" for a period of time before returning (Pascarella & Terenzini, 1980; Tinto, 1975; Gilbert & Gomme, 1986). Little of this research, however, deals with the total spectrum of dropping-out behaviors that range from dropping an occasional course to withdrawing from college permanently. Although each of these withdrawal behaviors may be a valid response to a problem, each also results in a loss of critical human and financial resources for the student and the institution.

Most colleges in the United States have a policy which gives students the opportunity to withdraw or drop a course without penalty. In most cases, students may drop a course up to a specified point in the semester and receive a "W" on their transcripts. This practice allows students a chance to avoid a low or failing grade if problems emerge as the semester progresses. While most students do not drop courses, others use the procedure as an habitual escape valve from demanding course requirements or repeated failures.

For example, at Chipola Junior College, a small rural community college in northwest Florida, there is much activity around the registrar's office a few days before the deadline to drop a course without penalty. Each year members of the retention and recruitment committee, faculty members, and administrators speculate about the severity of the problem, the reasons for dropping courses, and the characteristics of course droppers.

A review of the literature was conducted in an effort to find answers to some of the questions raised about the issue of who drops courses and why. In one of the few studies found on the subject, Fleming, Hill and Merlin (1985) reported on students who dropped courses for two semesters (chronic-droppers) or three semesters (super-droppers) in a three semester period at a private southern university. The repeat-droppers represented over one-third of the student body and accounted for over 90 percent of those who dropped courses. The chronic- and super-droppers were compared to the remaining student body of non-droppers. The repeat-droppers group was characterized by a greater number of males, a lower grade-point average (GPA), and a propor-

tionately higher percentage of majors in the colleges of business and engineering.

In a study conducted at a southeastern public university, Morris (1986) investigated the adding and dropping behaviors of students. He reported drop rates (percentage of the student body who dropped courses) for the fall semesters of 1982 and 1983 as 35.2 percent and 41.5 percent, respectively. He also reported that significant differences were found in the drop rates on the basis of sex and race, with higher dropping rates for males and blacks. A survey was developed and sent to students who had dropped courses to determine their reasons for doing so. On the basis of the returns, the author concluded that the most compelling reasons students dropped courses were scheduling conflicts, dissatisfaction with teaching, and a need for more study time.

The results of the Fleming et al. (1985) and Morris (1986) studies suggest a relationship between course dropping behavior and student characteristics. The purpose of this study was to extend this research by examining relationships between dropping courses and selected demographic, aptitude, and personal variables for students attending Chipola Junior College during the academic year 1985-86. Further, the total program of students (n=418) who dropped one or more credit courses at the college over a period of one academic year was compared with a random sample of students who did not drop courses on the specific variables of sex, race, ACT composite scores, current college GPA, and the degree of course dropping behavior. The reasons given for dropping courses were also analyzed for the total group and for subgroups based on sex and race classifications. The results of this study will be used to develop a base of information about course-dropping that can be used by college administrators and counselors to better plan retention and recruitment activities.

Methodology

The college database for credit-hour students was used to generate a list of students, full-time and part-time, who had dropped one or more courses from the summer semester of 1985 through the end of the spring semester of 1986. The sample consisted of 418 students who dropped one or more courses. Sex, race and current Chipola GPA were provided for all students in the sample. A total of 263 students had test scores on the ACT.

Reasons for Withdrawal

The drop procedure requires a student to complete a "Request for Course Withdrawal Form" which must be signed by the instructor of the course being dropped, indicating whether the student is doing "satisfactory" or "unsatisfactory" work in the course. The form also contains a request for the reasons a course is being dropped. Because the request for reasons is open-ended, a system was developed for categorizing the reasons. After reading through all of the forms and consulting the scant literature on the subject of students' reasons for dropping,

four broad categories were created. Each drop form was then judged to determine which of these categories best fit the reason given: (1) unsatisfactory performance in the course (generally a statement indicating the student would fail the course if continued), (2) academic reasons not involving failure (statements indicating the course wasn't interesting or the student found that the course was not required), (3) conflicts with work schedules, and (4) unclassifiable (either no reason was given or the reason couldn't be placed in to any of the other three categories). The initial placement of responses into categories was validated by comparing classifications assigned by three independent judges. The average degree of concurrence was 93%, which was considered sufficiently high to establish inter-rater reliability.

It was acknowledged that the four classifications were not mutually exclusive categories. For example, a student who indicates he/she has to drop a course because of work conflicts is probably not doing satisfactory work in the course. The four classifications may be different places on a continuum of unsatisfactory academic performance. The general classifications were used with this in mind.

Predictor and Outcome Variables

Drop outcomes were assessed in terms of the number of credit hours dropped in each of the fall, spring, and summer semesters. Credit hours dropped were summed across semesters to yield a total drop rate for the year.

Predictor variables consisted of sex, race (black or white), GPA (on a four-point scale), and ACT composite scores. These variables were examined as predictors of drop rates in a multiple regression analysis and as discriminators of drop and non-drop groups in a discriminate function analysis. Other analyses explored interrelationships between these variables and withdrawal reasons within and across semesters.

Results

For the academic year of 1985-86, a total of 2001 different students enrolled for credit courses at the college. A total of 418 of those students dropped one or more courses during the year, representing 20.8 percent of the enrollment. One out of every five students used the drop procedure to reduce his/her course load or to withdraw from school completely.

Table 1 displays semester drop rates as percentages of credit hours dropped relative to total credit hours produced. The least amount of credit dropped occurred in the summer sessions, with students dropping only 4.8 percent of the total credit hours. The greatest amount of credit was lost in the fall semester, with a total of 7.9 percent of the credit hours dropped. The spring semester rate was only slightly better with a 6.7 percent dropping rate. The total loss of credit due to dropping was seven percent for the entire academic year.

TABLE 1
Number of Credit Hours Dropped at CJC in Academic Year 1985-86 As a Percentage of Total Academic Credit Hours of Student Enrollment

Semester	Credit Hours Dropped	Total Academic Credit Hours	Percent Dropped
Summer 1985	157	3,270	4.8
Fall 1985	1034	13,135	7.9
Spring 1986	836	12,500	6.7
Totals	2027	28,905	7.0

Droppers vs. Non-Droppers

A major focus of this study was to determine whether those who did drop courses differed significantly from those who did not drop courses. For the academic year, 418 students dropped courses and 1583 did not drop courses. To compare the two groups, a random sample of 412 of the 1583 non-droppers was formed by selecting every fourth member of the latter population. The mean ACT composite scores and GPAs were compared for the two groups (Table 2). As shown, the mean ACT composite score of the non-dropper group ($M = 16.44$) was significantly higher ($p < .05$) than the mean of the dropper group ($M = 15.36$). Likewise, the mean GPA for the non-dropper group ($M = 2.63$) was significantly higher ($p < .001$) than the mean of the course-dropper group ($M = 2.24$). There were greater percentages of males and blacks in the course-dropper group (Table 3).

A discriminate function analysis was performed to determine which variables, if any, significantly discriminated between droppers and non-droppers. The variables of race, sex, GPA and ACT composite scores were entered into the analysis. GPA emerged as the variable on which the two groups could most clearly be discriminated. Because of the strength of GPA in discriminating the groups, and the overlap between independent variables, the influence of the other variables were attenuated and found to be nonsignificant. Using the discriminate function containing GPA, a classification procedure performed on the data correctly classified 62.34 percent of the sample as a dropper or a non-dropper. The GPA thus provided the most useful information for predicting whether one or more courses would be dropped by the present student population.

TABLE 2
A Comparison of Selected Variables for Course Droppers and Non-Droppers at Chipola Junior College 1985-86

Variable	n	Mean	SD	t Value	2-Tail Prob.
ACT COMPOSITE SCORES					
Droppers	262	15.36	5.76	-2.33	.02
Non-Droppers	338	16.44	5.59		
GPA					
Droppers	360	2.24	0.80	-6.14	.0001
Non-Droppers	391	2.63	0.92		

NOTE. Non-droppers were a random sample of 412 selected from the population of non-droppers (1583) at CJC in 1985-1986.

TABLE 3
A Comparison of Course Droppers and Non-Droppers by Sex and Race at Chipola Junior College 1985-1986

Variable	Group: Droppers		Non-Droppers		Total	
SEX	N	%	N	%	N	%
Male	204	(55.2)	166	(44.8)	370	(44.6)
Female	214	(46.6)	245	(53.4)	459	(55.4)
All	418	(50.4)	411	(49.6)	829	(100)
RACE						
Black	78	(59)	54	(41)	132	(16.3)
White	329	(48.7)	347	(51.3)	676	(83.7)
All	407	(50.4)	401	(49.6)	808	(100)

NOTE. A random sample of 412 was selected from the total group of students (1583) who did not drop courses at CJC in 1985-1986.

Predictors of Withdrawal Rates

The next major question in this study sought to determine the extent to which the number of credit hours dropped related to the demographic variables of race, sex, GPA and ACT composite scores. Race and sex groups were compared by t-tests on the number of credit hours dropped each semester. Table 4 shows the group means, standard deviations, and t-ratios for these analyses. No significant differences were found on the basis of race or sex. Males and females tended to drop about the same number of credits, as did blacks and whites.

TABLE 4
Mean Number of Credit Hours Dropped As A Function of Race and Sex

	Groups					
	Race			Sex		
	Black	White	t-ratio	Male	Female	t-ratio
Summer						
n	10	31		17	28	
M	3.8	3.4	.51	3.7	3.4	.53
SD	2.3	2.2		2.2	2.1	
Fall						
n	50	167		119	104	
M	4.4	4.7	-.48	4.8	4.5	.69
SD	2.8	3.4		3.4	3.1	
Spring						
n	31	168		99	105	
M	3.8	4.2	-.61	4.3	3.3	1.08
SD	3.5	3.3		3.9	3.0	

NOTE. No t-ratios were statistically significant.

Pearson-product moment correlations were computed to determine the relationship of credits dropped by semester with ACT composite scores and GPA. Table 5 summarizes these results. The correlations were close to zero and non-significant with one exception. The number of credits dropped in the summer semester was inversely related to GPA ($r = -.30$, $p < .05$).

The combined predictive ability of the four demographic variables (GPA, race, sex and ACT composite scores) was examined by treating them as independent variables in a multiple regression analysis with total credits dropped as the dependent variable. None of the independent variables accounted for sufficient variance to be entered into the regression equation (via a stepwise procedure). Accordingly, the variance in the number of credits dropped cannot be reliably explained by any of the demographic variables selected.

TABLE 5
Correlations of ACT Composite Scores, Grade Point Average (GPA) and Number of Credits Dropped by Semester

	Semesters			
	Summer	Fall	Spring	Total
ACT Composite	-.04 n=26	-.06 n=144	-.11 n=129	-.67 n=262
CJC GPA	-.30* n=41	-.09 n=187	-.07 n=186	-.03 n=360

* $p < .05$

Chronic- and Super-Droppers

In order to determine whether students were dropping courses on a regular basis, it was necessary to identify how many students in the sample of droppers were in attendance at the college for two or more semesters. This group comprised 68 percent of the dropper sample. Of those students who attended for two semesters (n=188), only 14.9 percent dropped courses in both semesters and would be labeled chronic-droppers according to the Fleming et al. (1985) study. For those students who were enrolled all three semesters (n=98), 20.4 percent dropped courses in each of two semesters (chronic-droppers) and 3.1 percent dropped courses in each of three semesters (super-droppers). The combined group of chronic- and super-droppers comprised 12.2 percent of those persons dropping courses and accounted for 21.3 percent of the total credit hours dropped for the year.

Reasons for Dropping

Another major research question dealt with the reasons that students gave for dropping courses when they completed their drop forms. As previously described, the open-ended responses that students wrote on their forms were classified into four major categories: (1) unsatisfactory performance, (2) other academic reasons, (3) work conflicts, and (4) unclassified. The results of the classification of the students' responses by semester are presented in Table 6.

By far, the largest percentage of students' responses were placed in the unclassifiable category. There was too much diversity of individual responses in this category to attempt any frequency counts for their reasons. The primary interest of this study concerned the responses given in the first three categories. Accordingly, the largest percentage of identifiable reasons for dropping courses involved unsatisfactory ac-

ademic performance or low grades (28.8%). The percentage of students giving this reason was very similar for the fall and spring semesters (31.8% and 28.2% respectively), but quite different for the summer semester (15%).

TABLE 6
Percentages of Students Giving Different Reasons for Dropping Courses by Semester

	Reasons			
Semesters	Academic-Low Grades	Academic-Other	Work	Other
Summer	15.0	10.0	12.5	62.5
Fall	31.8	18.9	5.1	44.2
Spring	28.2	10.3	14.4	47.2
Overall	28.8	14.3	9.7	47.1

The percentage of responses classified as work conflicts ranged from a low of 5.1 percent for the fall semester to a high of 14.4 percent for the spring semester, with an average of 9.7 percent for the year. The percentage of students dropping courses because of "other academic reasons" varied noticeably for the summer (10%), fall (18.9%), and spring (10.3%) semesters. Generally, responses in this category indicated that the student had changed majors, lost interest in an elective course, or was carrying too many hours. Although this category is not mutually exclusive of the others, its distinction from the "low grades" category was supported by instructors indicating that students had satisfactory performance at the time of dropping.

Chi-square tests were performed to determine if reasons for withdrawal were related to race. No significant differences were found when race was crossed with summer or fall withdrawal reasons. A significant chi-square value of 9.88 ($p < .05$) was obtained for the spring semester. Proportionally more blacks (51.7%) than whites (24.1%) indicated that they withdrew because of poor academic performance. On the other categories, blacks and whites gave proportionally similar reasons across all semesters.

Additional chi-square tests were conducted to determine if males and females differed in their reasons for withdrawing. As for race, there were no significant differences in the reasons for dropping in the summer and fall semesters. A significant chi-square value of 9.59 ($p < .05$) was found, however, for the spring semester. Proportionally more

males (21%) than females (8%) dropped because of work conflicts. Comparable proportions of males and females indicated their reasons for dropping as "poor grades" and "other academic reasons."

Conclusions

Any time a student drops a course, it can be perceived as a loss of valuable human and financial resources. The data from this study indicate that Chipola Junior College lost a total of 7 percent of its total credit-hour production to student withdrawals in the 1985-86 academic year. One of every five (20.8%) full-time and part-time academic students dropped one or more courses. This drop rate is considerably lower than that reported in the Morris (1986) study where 35% to 40% of the students dropped courses. Thus, compared to at least one southeastern public university, Chipola Junior College seems to have a low drop rate. Additional studies need to be completed for other community college populations to establish a comparative base.

The pattern of dropping indicates that a greater percentage of hours are lost in the fall semester (8%) when there are the greatest number of "first time in college" students. This fits the perception of faculty and students that there is a major adjustment for students the first semester they are in college. The lowest rate of withdrawal occurs in the summer semesters when there are the fewest number of new students (4.8%). These findings suggest that more attention be given to orientation programs for first time in college students and more emphasis be placed on advising those students who are beginning their college careers.

If only one in five students drop courses, it is natural to ask if the other four are different in terms of sex, race, ACT composite scores and grade-point average. The findings in this study indicate statistically significant differences between the groups on the basis of all of the selected variables. The group of students who did not drop courses had a greater percentage of whites and females, higher grade-point averages, and higher ACT composite scores. Although academically successful students do drop courses, they apparently do so less often then students with poorer academic records. The discriminate function analysis indicated that gradepoint average was the single best predictor of who would drop courses.

In analyzing the group of students who did drop courses, some interesting patterns emerged which were not statistically significant, but worthwhile to note. Blacks dropped more hours in the summer and whites dropped more hours in the fall and spring semesters. Males dropped a greater number of semester hours than females in each of the summer, fall, and spring semesters. When these findings are reviewed in light of the significant correlation that was found between grade-point average and hours dropped in the summer session, there may be implications for advisors who are working with students who are not strong academically but want to enroll for coursework in the summer sessions. There is some suggestion that students with lower GPAs

will experience greater difficulties in the compressed timeframe of the summer semester and end up dropping courses. Additional research should address the relationships between academic performance, course withdrawals, and more personal variables like motivation, persistence, and measures of social integration.

When compared to the population of droppers at one private southern university (Fleming et al., 1985), Chipola does not seem to have as great a problem with chronic-dropping. Students dropping courses in two semesters (chronic-droppers) or three semesters (super-droppers) accounted for only 12.2 percent of those dropping courses at Chipola. In Fleming's study the repeat droppers accounted for 93.6 percent of those dropping courses. The community college, with its open door policy, would undoubtedly have a greater diversity of students and more part-time students than the university. This would account for the greater percentage of students (31.6%) who were enrolled for only one semester and dropped a course during that semester. Ongoing data collection will determine whether the repeat droppers at Chipola continue to withdraw from courses.

The authors are cautious about interpreting the data on students' reasons for dropping courses. First of all, it is difficult for any person to understand his/her own reasons for doing certain things in life. When asked to give a reason, we often oblige but realize the answer is only part of the truth. Yet, the responses that students gave for dropping courses in this study seemed to reveal a great deal of candor. Of the responses that were classifiable, the greatest percentage of reasons dealt with the student's wanting to drop a course to avoid getting a bad grade. This may have been partly the result of the requirement to have the instructor of the course indicate whether the student was doing satisfactory work at the time of dropping. It's difficult to look an instructor in the eye and put a reason other than academic failure if he/she is going to have to sign the form, see a reason and indicate whether the academic progress is satisfactory.

The results in this study are somewhat different than those reported by Morris (1986) in which students received a survey asking their reasons for dropping after they had dropped. Students gave the greatest number of responses dealing with "other academic reasons for dropping," the second category in the Chipola sample. Either the two samples differ considerably in characteristics or time had allowed a certain amount of rationalization to take place in those students responding to the Morris survey.

It was unexpected that so few students would indicate they were dropping courses because of work conflicts. Although nearly two-thirds of the students are employed, proportionally few students used work conflicts as a reason for dropping. Apparently students and employees are planning schedules so that few changes in work hours are required for working students.

In reading each of the 418 drop requests, an anecdotal observation was that a large number of drop forms had a very worn look. It appeared as if the forms had been folded and refolded many times. The impression given was of an uncertainty about completing the form and submitting it to the registrar. Observing students bringing the forms to the registrar supports the idea that dropping courses is still difficult for many students, whatever the reasons.

From the results obtained from this study, predicting who is going to drop courses would be risky on the basis of the academic characteristics of sex, race and ACT composite scores. It does appear that students with higher GPAs will be less likely to drop courses, especially in the compressed summer semester. Advisers may, therefore, use this information to direct students with low GPAs toward reduced course loads or less demanding courses for summer enrollment. The data from this study will serve as the beginning of a longitudinal study of attrition. As the college makes changes in student orientation, advising, preassessment and other activities, a change in the withdrawal statistics may offer some measurable outcomes of the effectiveness of those changes.

References

Fleming, D., Hill, H., & Merlin, D. (1985). A profile of the chronic-dropper and super-dropper. College and University , 61 (1), 5-16.

Gilbert, S. & Gomme, I. (1986). Future directions in research on voluntary attrition from colleges and universities. College and University, 61 (3), 227-238.

Pascarella, E. & Terenzini, P. (1980). Predicting persistence and voluntary dropout decisions from a theoretical model. Journal of Higher Education, 61 60-76.

Morris, E. (1986). A study of changes of registration by adding and dropping classes. College and University, 61 (4), 327-337.

Tinto, V. (1975). Dropout from higher education: A theoretical synthesis of recent research. Review of Educational Research, 45, 89-125.

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ASSESSMENT IN TENNESSEE COMMUNITY AND TECHNICAL COLLEGES

H. James Owen

Introduction

Educational achievement leveled off in 1986 after four years of steady gains. This statement is attributed to U.S. Secretary of Education, William J. Bennett (Evangelauf, 1987), and is based on several criteria which the U.S. Department of Education maintains on an annual basis. One of the criteria used in the annual survey of educational achievement is SAT and ACT test results by state. According to the U.S. Department of Education, 28 states may be considered "ACT states" while 21 states are "SAT states," with the State of Washington not using college admissions test to any great extent. The 1986 annual average ACT score reported for Tennessee was 18.0. While this is 0.8 below the national average, it was an improvement of 0.4, or twice the national average gain for 1986 (Evangelauf, 1987).

The Board of Regents of the State University and Community College System of Tennessee (SBR) govern six regional universities, ten community colleges, four technical institutes, and 26 postsecondary nondegree granting area vocational-technical schools. In addition, program and funding approvals are the function of the Tennessee Higher Education Commission (THEC) for all public postsecondary degree granting institutions in the state. The performance funding assessment programs described in this article apply to the six universities, ten community colleges and four technical institutes only. The University of Tennessee, while governed by a separate board, is also responsible to THEC for program and funding decisions, including the instructional performance evaluation report program described here.

High School and College Competencies

In 1983 the College Board published Academic Preparation for College, called by its cover color - the Green Book. This publication, using participants from across the nation, has established a significant standard for undergraduate curriculum development. This study was based on the College Board's Educational Equality Project (EQ Project) which started in 1980. The EQ Project was designed to strengthen secondary education by defining competencies that all students should have prior to entering a college-level program. In 1984, the Tennessee Board of Regents adopted the recommendations of the EQ Project. Placement testing has shown however, over the last several years that all students

applying to enter an associate degree program do not possess these essential high school competencies. Therefore, remedial and developmental instruction in a very structured way began in all SBR two-year and four-year institutions in the fall of 1985 with data being gathered so as to prepare for future longitudinal analysis.

The six areas of competencies needed for doing effective work in college as listed in the Green Book (1983) are reading, writing, speaking and listening, mathematics, reasoning, and studying. The academic subjects that best achieve the basic academic competencies are English, the arts, mathematics, science, social sciences and foreign languages. Tennessee is presently one of the leaders in the use of the Green Book and EQ Competencies.

A major implication for two-year colleges noted by Dunford (1987) is that four-year colleges will use the Green Book to evaluate transfer courses for credit. Tennessee has already addressed this issue through a proposed level I course review.

During this same time period the State Board of Regents (SBR) adopted a Level I (Freshman and Sophomore) course review program to evaluate all courses available to entering students and courses that have no prerequisites. The purpose of this review was to ensure that all Level I courses are indeed college-level courses and presume the basic EQ competencies. This campus-based review at each institution includes the following elements:

- Choose an Evaluation Model
- Design the Evaluation Process
- Develop a Reporting Format
- Develop a Calendar

This very detailed review of all freshman and sophomore courses began in early 1987 and will end in mid-1988 just prior to the time that all two- and four-year colleges in the SBR system will change from the quarter system to the semester calendar.

The Role of Institutional Accreditation

The Southern Association of Colleges and Schools (SACS) Commission on Colleges is the regional accreditation body for higher education in the South. The Commission has for several years been a leader in institutional evaluation which stresses outcomes. Its Manual for Accreditation (1987) includes an overview of the self-study process for reaffirmation of accreditation. All public two-year colleges in Tennessee are accredited by the Commission of Colleges.

Among the expected results of the SACS self-study process are the following:

3. the enhancement of educational effectiveness by developing a plan for the evaluation of educational results;

4. the strengthening of the planning process resulting in a better system of ongoing institutional research, self-analysis and self-improvement;

Tri-Cities State Tech, a two-year technical college located in upper East Tennessee, will be starting the self-study process in the fall of 1987. The instructional performance evaluation process established by the Tennessee Higher Education Commission (THEC) will be a very significant ingredient in meeting the above stated expected results of the SACS self-study process.

The SACS Commission on Colleges has also recently revised its criteria for accreditation with particular emphasis on institutional effectiveness. Section III of the Criteria for Accreditation (1987) is entitled "Institutional Effectiveness." The major parts of Section III are: (a) planning and evaluation, and (b) institutional research. Section III stresses the importance of assessment with this statement: "A comprehensive approach to accreditation, however, takes into account not only the resources and processes of education (such as faculty and student qualifications, physical plant, fiscal resources and other elements addressed in the Criteria) but also the evaluation of the results of education and plans for the improvement of the institution's programs."

The thrust of the THEC performance funding program as discussed here is to follow the approach outlined by the Commission on Colleges by emphasizing outcomes and results as part of the overall picture. This approach is also in concert with Moore (1986) who stated: "The writing on the wall is abundantly clear to any community college leader who has been paying attention. The mandate - variously issued by educational professionals, the public, the politicians, and the press - is for increased accountability and increased effectiveness in institutions of higher education."

Performance Funding

Since the academic year 1982-83, the Tennessee Higher Education Commission (THEC) had been funding five percent of each public two-year and four-year institution's operating budget based on points earned out of a total of 100 possible points spread across five areas. The outline of the Annual Instructional Performance Evaluation Report for the 1984-88 fiscal years is found in Table I. The data gathered for 1986-87 and reported in July, 1987 constituted the last year of the five-year cycle. A summary of the five variables which have been in use for the past five years is as follows:

Variable I: Program Accreditation - (25 points)

This procedure begins with an inventory of all programs at each individual institution. A comparison is then made of an institution's program inventory against the Council on Postsecondary Accreditation's (COPA) list of accreditable programs. The 25 available points are prorated in accordance with the percentage of possible programs that are accredited in fields where COPA accreditation is available.

Variables two, three, four and five each have two standards by which points can be earned. The second standard is more difficult to achieve and carries the higher number of points.

Variable II: Program Field Evaulation - (30 points)

Standard A (10 points) focuses on programs evaluated within the past five years. There are three options from which an institution can choose to meet this standard.

Option 1: Test all graduates in 20% or more of all programs using an externally validated test.

Option 2: Test all graduates in 20% or more of all programs using locally developed tests employing specific criteria and approved by SBR.

Option 3: Test all graduates by external Peer Review.

The points in Standard A are awarded for administration of tests and are not based on results.

Standard B (20 points) - As the five-year cycle progresses the points for all programs tested are tallied. Points can be earned only for those programs where graduates exceed the published national norm for each test used or who show improvement by comparison with previous outcomes. This standard can be met in one of three ways:

Option 1: By testing all graduates and earning points in those programs where the institution's graduates' mean score exceeds the established mean score for the externally validated instrument.

Option 2: By making a comparison with previous outcomes via externally validated instruments.

Option 3: By making a comparison with previous outcomes via locally developed instruments that are approved by SBR.

Variable III: Institution-wide Educational Outcomes (25 points)

Standard A (25 points) stresses General Education outcomes and is based on the administration of the ACT-COMP instrument and applies

to four-year colleges and community colleges only. Technical Institutes do not administer the ACT-COMP at this time.

Section 1 (5 points) Points are awarded for the administration of the ACT-Comp within a five year period.

Section 2 (20 points) for the following options:

Option 1: Points are earned based upon value added from a previous value-added measure which is above the average of the performance of graduates at comparable institutions.

Option 2: This option is more challenging and requires improvement in value-added from the most recent institutional measure of value-added.

In order to receive points for Section 2, an institution must show a mean score gain.

Standard B (25 points) is concerned with placement of graduates.

Section 1 (5 points) requires the administration of quarterly surveys.

Section 2 (20 points) has the following options:

Option 1: Points can be earned by program related placement that exceeds 70%.

Option 2: Points can be earned for the extent that the annual placement rate exceeds the previous year's rate.

While technical institutes usually do well in this placement performance section, the ACT-COMP general education value-added area is a difficult standard for community colleges to meet. In addition to this requirement, the State Board of Regents in Tennessee has also mandated a statement of general education outcomes for each degree program.

Variable IV: Instructional Improvement Based on Referent Group Surveys - (10 points)

Standard A (5 points) allows for points to be earned by improvement actions based on the administration of a survey to one of the following three referent groups: currently enrolled students, formerly enrolled students, or employers. The ACT Alumni Survey is a common instrument used to meet the requirements for Standard A.

Standard B (5 points) has two options and points can be earned in the following ways:

Option 1: by improvement actions based on two or more referent group surveys conducted in the same fiscal year.

Option 2: by improvement (satisfaction) demonstrated through a comparison of survey outcomes of a previous survey of the same referent group. A mean score gain must be shown to earn points.

TABLE 1
Annual Instructional Performance Evaluation Report
(For 1984-88 Fiscal Years Funding)

Variables	Requirements	Maximum Points Available
Variable I:	Program Accreditation (25 points) (% of individual programs accredited out of those eligible)	25
Variable II:	Program Field Evaluation (30 points)	
Standard A:	Program Evaluation within 5 years	10
Standard B:	Demonstration of Improved Performance Quality of Programs	20
Variable III:	Institution-wide Education Outcomes (25 points)	
Standard A:	General Education	
	1) Administration of ACT-COMP within 5 year period	5
	2) Performance on ACT-COMP (Value Added Measure)	20
	OR	
Standard B:	Placement of Graduates	
	1) Administration of Quarterly Survey	5
	2) Placement Performance	20
Variable IV:	Instructional Improvement Based on Referent Group Surveys (10 points)	
Standard A:	Improvement Actions based upon Administration of Survey	5
Standard B:	Improvement Demonstrated by Comparison of Survey Outcomes	5
Variable V:	Planning for Instructional Program Improvement (10 points)	
1.	Development of a Plan for the Following Academic Year	5
2.	Evaluation of Previous Year's Plan	5
	Total Points Available	100

Variable V: Planning for Instructional Program Improvements (10 points)

Standard A (5 points) stresses the need for an acceptable instructional improvement plan for the next academic year. The Instructional Improvement Plan should:

1. Cite specific goals, objectives and benchmarks;
2. Describe how goals and objectives focus on classroom instruction or academic support programs;
3. Relate goals and objectives to Variables I, II, III and IV;
4. Describe how outcomes will be evaluated;
5. Describe the nature and extent of faculty participation in the development, implementation and evaluation of the plan;
6. Show how the goals and objectives relate to the long-range plans of the institution, the system, and the THEC.

Standard B (5 points) is based upon the percent of goals, objectives and benchmarks achieved that were established in the prior year's plan.

The Future Trend in Performance Funding

During the 1986-87 academic year THEC established a Performance Funding Advisory Committee to review the results of the first fiscal year 1984-88 five-year cycle. The summary of this cycle for Tri- Cities State Tech is outlined in Table 2.

Table 2
Tri-Cities State Tech Instructional Performance Summary Report: 1984-88

Five Year Cycle	Year Evaluated	Points Used for Funding Year	Date Evaluation Completed	Points Requested by Institution in July	Points Awarded by THEC in Oct.
1	1982-83	1984-85	July 1983	76	76
2	1983-84	1985-86	July 1984	90	88
3	1984-85	1986-87	July 1985	94	94
4	1985-86	1987-88	July 1986	91	90
5	1986-87	1988-89	July 1987	94 (est)	94 (est)

The summary data in Table 2 is for Tri-Cities State Tech only. A similar report could be prepared for each public institution in the state.

The proposed new guidelines for Instructional Performance Evaluation (Performance Funding) are longer than those for 1984-85. The concerns developed by the advisory committee based upon the experience of the first four years of the five-year cycle along with corresponding revisions are listed in Table 3. These concerns have led to corresponding adjustments in the proposed performance funding guidelines for fiscal years 1989-93 and are shown in Table 4.

An analysis of the changes between 1984-88 and 1989-93 show that while points for COPA accredited programs have been reduced by seven, the area of program field evaluation has been increased by two points. In addition, improvement surveys have been increased by five points. Of greater significance, however, are the increased requirements for additional program field assessment, tougher general education standards, and more specific requirements for value-added mean score gain and comparisons to external or national norms. While the planning section has been made more precise institutions can receive a one-time bonus for pilot testing approved instruments. Item 19 in Table 3 notes that too many institutions scored above 90 in the first five-year cycle. The proposed changes should bring about a greater variance in overall scores.

Future Trends in Assessment

A recent report by the American Association for Higher Education (1987) entitled Assessment and Outcomes Measurement: A View From the States indicates that, on a national basis, most states are beginning to rely on institutionally developed assessment programs rather than state-wide or national instruments. The AAHE study indicates that some legislators and higher education officials are beginning to question the use of state-wide instruments. While many persons equate "value added" or "rising junior" exams with assessment, few states have started such examination programs recently.

The report cites six states - Connecticut, Kansas, Maryland, Nebraska, Tennessee and Virginia - where "rising junior" examination were studied and rejected. Many states are holding seminars or conferences on assessment. Tennessee is holding the annual 1987 Regents Conference with assessment as the theme. The Southeastern Association for Community College Research had as its 1987 conference theme "Assessing Institutional Outcomes." The AAHE report notes that pilot or model projects in one or two institutions within a state are more common than statewide approaches. While Alabama, Arizona, Kansas and Rhode Island require assessment reports in the budget review process, the AAHE report indicates that no state has a program quite like Tennessee. Diversity appears to be the keyword in assessment at this time.

While state-wide testing is in the process of being reduced nationally, there are two areas where state-wide tests are still employed frequently

TABLE 3
Summary of Concerns and Corresponding Revisions Incorporated in Proposed Guidelines for Performance Funding for 1989-1993

CONCERNS	CORRESPONDING REVISIONS
1. Too much emphasis on accreditation	Variable I (Accreditation) has been reduced from 25 points to 18.
2. Some formally accreditable programs should not expect to become accredited	A limited exemption provision added to Variable I
3. Some specific emphasis should be given licensed and certified fields	In Variable II (Field Assessment) 8 points have been set aside for licensed/ certified fields (IIA)
4. In fields where externally validated instruments do not exist, institutions should be able to show success by performance above a norm, not just by improvement.	In IIB there is provision for cooperative question banks.
5. Where feasible, corresponding fields on different campuses should use same test instrument.	In IIB there is provision for majority rule for kind of test instrument.
6. In 2-year institutions, placement is integral to field's performance.	For 2-year institutions, placement standards added in Variable II.
7. Testing small numbers of graduates is meaningless.	In IIB an exemption added for small fields.
8. Graduate fields should be assessed, but not with pencil and paper tests.	For universities, 12 points have been assigned to IIC for external review of master's programs.
9. Too much paperwork in Variable II.	Fields will be frozen for the entire cycle, test instruments will not be submitted to the Commission.
10. All or nothing in General is inappropriate.	Points have been scaled in Variable III.

TABLE 3 (continued)

CONCERNS	CORRESPONDING REVISIONS
11. All or nothing in overall program is inappropriate.	Overall placement for 2-year institutions moved to Variable II, points have been scaled.
12. More emphasis should be placed on general education for 2-year institutions in light of new SACS criteria	Variable III will apply to all institutions
13. Peer group norms for general education are inappropriate	In Variable III, a more stable standard is designed to replace peer group norms
14. 60-day placement window inappropriate.	Placement window has been extended.
15. More emphasis should be placed on surveys.	Variable IV (surveys) increased from 10 to 15 points
16. Planning should be more focused on the preceding parts of Performance Funding.	In Variable V (planning) points specifically allocated to planning for improvement in preceding variables.
17. There should be some incentive to try other assessment instruments.	An Optional Variable VI has been added for this purpose.
18. Too many points are given for process.	Process points reduced from 35 to 20.
19. Too many scores above 90	Standards stiffened in each variable.

- value-added tests for education students, and freshman basic skills tests. Tennessee's approach is much more comprehensive, and is partially in response to meeting regional accreditation outcomes criteria, as well as the College Board EQ Competencies and is employed to directly affect the education and general funding of an institution. While Tennessee's approach may not be a national model at this time, it is indeed responsive to the call for accountability that is being raised both in Tennessee and at the national level. Whether it be an institutional requirement or a state mandate - institutions must in some way become accountable for the educational process and product.

TABLE 4
Proposed Performance Funding Guidelines for Funding
Fiscal Year 1989-1993

I. Program Accreditation (18 points)

Points awarded based upon the percent of COPA accreditable programs that are accredited.

II. Program Fields Assessment (32 points)

Each mature licensed or certified field will be assessed twice during the five-year cycle through performance of graduating students on licensure or certification examinations. Points will be awarded based upon the extent of student performance relative to the external mean and the extent of improvement over performance during the base period relative to the external mean.

Major fields not involved with licensure or certification will be assessed once during the five-year period. Points will be awarded in accordance with the performance of graduating students or externally validated tests or locally developed tests based on approved criteria.

Program placement rates must exceed 75% annually to be considered successful.

III. General Education Assessment (25 points)

Five points will be awarded for the administration of the ACT-COMP exam to graduating associate degree students.

Twenty points are possible due to student performance on the ACT-COMP. The scale of awarding points will be based on the mean value-added score. The value-added score in two-year colleges will be compared with the mean value-added nationally for peer institutions required to earn the full 20 points.

IV. Surveys (15 points)

Five points may be earned in each of the following areas:

A. Survey of graduates using a common set of questions related to general education from the ACT Alumni Survey.

B. Five questions from the ACT Alumni Survey on general education will be specified to be used. The institution will earn one point for each item in which the percentage of "very much" responses exceeds the national mean.

TABLE 4 (Continued)

C. Five questions selected by the institution may be used from outside the ACT Alumni Survey. Improvement over the base period exceeding 80% success must be achieved to earn the full five points.

V. Planning (10 points)

Two points may be earned in each of the following areas:

A. Activities undertaken which overcome recommendations identified in areas identified for program accreditation in the previous year.

B. Specifications undertaken to improve curriculum or instruction in the field where graduates were tested in the previous year.

C. Program - specific and general actions planned to be taken to improve last year's graduate placement results.

D. Program - specific and general actions planned to be taken to improve student performance in general education.

E. Program - specific and general actions planned to be taken to improve areas of instruction or instructional support from the two previous years that have not been perceived as functioning effectively.

VI. Pilot Testing (4 points)

This bonus area involves up to four points that may be earned in the aggregate or all-in-one-year for pilot testing and analyzing the results of approved instruments for graduating associate degree students.

Total: 100 points plus 4 bonus points

References

American Association for Higher Education (1987). Assessment and outcomes measurement: A view from the states.

Evangelauf, J. (1987). Achievement leveled off in the 1986 after four years of growth, Bennett Reports, Chronicle of Higher Education. v. 33, (23) 28.

Dunford, T. (1987). The green book and the blue box" The new undergraduate curriculum and its implications for community colleges, Community College Review, 14(3). 21-24.

Moore, K.M. (1986) "Assessment of institutional effectiveness." New Directions for Community Colleges. San Francisco: Jossey-Bass, 56. pp. 49-60.

Southern Association of Colleges and Schools, Commission on Colleges. (1987). Criteria for Accreditation.

Southern Association of Colleges and Schools, Commission on Colleges. (1987). Manual for Accreditation.

The College Board. (1983). Academic Preparation for College: What Students Need to Know and be Able to Do.

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ENROLLMENT PROJECTIONS: TEMPLATE AND GUIDE

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Small community colleges with enrollments between 500 and 2,500 students have traditionally had a problem of not having the financial resources necessary to hire professionals with special skills in research, planning and computer operations and to purchase the necessary equipment for the operation of these offices. As a result, administrators have had to rely on less than adequate resources for decision making.

The data needs for a small institution are no different from those institutions whose enrollment is five thousand, ten thousand or more. The need to know what enrollments can be expected to be and which programs are likely to have lower or higher enrollments in the future is extremely important to the administrator who has to make decisions on faculty size, classroom space and departmental budgets. Since expenditures in these areas is a future investment, decision makers need to be able to project which programs are likely to increase and which are likely to decrease in order that limited resources can be allocated to those areas which can be identified as having stable or growing enrollments.

Using Software as a Resource

The electronics revolution has provided a resource to satisfy this forecasting need. Most small institutions now have personal computers for administration and instruction. Also most PC users now have access to one of the more powerful and widely used software packages sold for the PC market -- Lotus 1-2-3. Deans with initiative and curiosity can gain valuable program information by serving as their own institutional research officer through the use of PC software.

One of the primary strengths of Lotus 1-2-3 is that it produces calculations which permit a user to do linear regression, which can be used to make enrollment projections. My purpose here is not to explain the statistic but to say that by using linear regression you can calculate a line of best fit for historical data. When extended, future data points can be projected. The data for regression can be enrollments, dropouts, total annual revenue, or anything else that can be counted.

Having discovered the ability of Lotus 1-2-3 to do calculations, I created a spreadsheet to project four semesters of enrollments from the preceding ten using linear regression. In the event that this spreadsheet will be of value to you I have included it in Appendix A. It contains the contents to be typed into each cell of a 1-2-3 spreadsheet

to create a template for projecting future enrollments. I call the template "Futenrol." (For those not familiar with 1-2-3, the template is a model or blank form from which users can make a new copy each time they want to enter a different set of figures.) Appendix B provides a set of instructions for using the template as-is or for modifying it. Tables 1, 2, and 3 illustrate the way a blank template will look on your monitor, while Tables 4,5, and 6 show a filled template. Figure 1 illustrates a graph that can be made using the template. The template comes with two macro commands which can be used to print the data table and create a graph using the data (see paragraph 10 of "Using the Template As-Is" in Appendix B).

Table 1. Screen One of the Template, "Futenrol"

```
     [PROGRAM TITLE (Campus)]
ENROLLMENT HISTORY  from [term year] through [term year] and
ENROLLMENT PROJECTION (term year -- term year) via LINEAR
REGRESSION
Formula:  Projected Enrollment = (Slope * Semester) + Intercept
                               Y = AX + B
```

History		Projection	
Semester	Enrollment	Semester	Enrollment
Fall 197		Fall 198	0
Spring 197		Spring 198	0
Fall 197		Fall 198	0
Spring 198		Spring 198	0
Fall 198			
Spring 198			
Fall 198			
Spring 198			
Fall 198			
Spring 198			
Fall 198			
Spring 198			
Fall 198			
Spring 198			

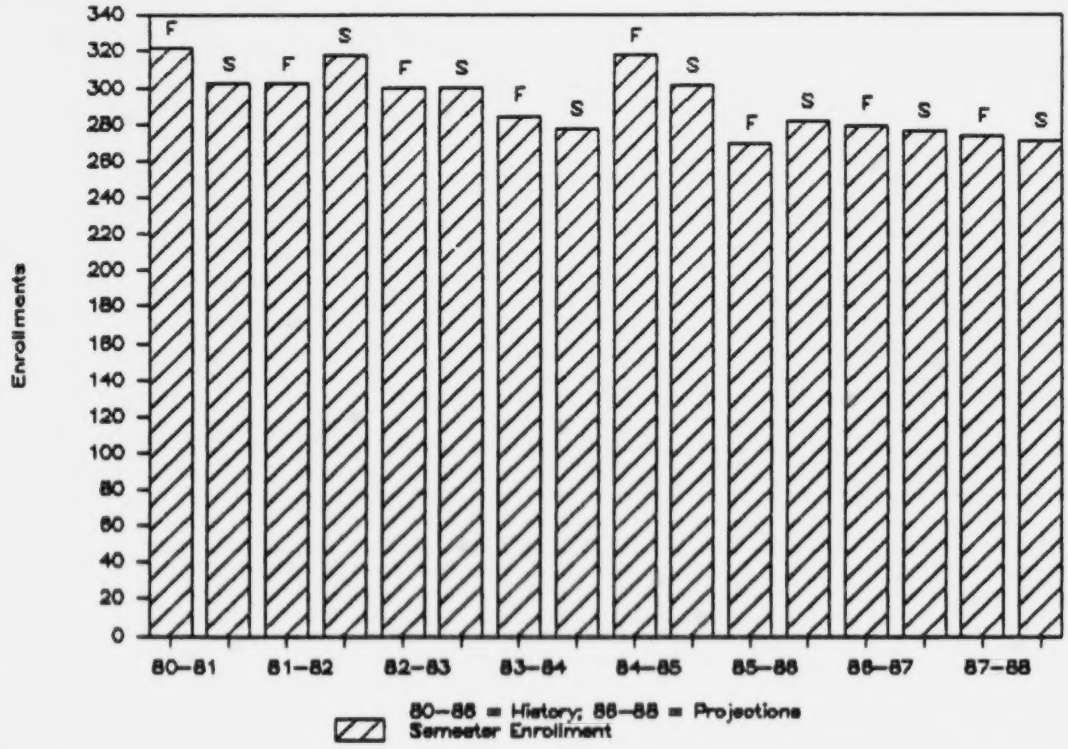

FIGURE 1. Enrollment History and Projections. Commercial Art, City Park Campus.

Table 2. Screen Two of the Template, "Futenrol"

Linear Regression Formula Calculations

Sem. ("x")	x^2	y^2	x * y	Trended Datapoint	
1	1	0	0	0	
2	4	0	0	0	Slope = 0.00
3	9	0	0	0	
4	16	0	0	0	Intercept = 0.00
5	25	0	0	0	
6	36	0	0	0	
7	49	0	0	0	
8	64	0	0	0	Sum of Y = 136
9	81	0	0	0	
10	100	0	0	0	Sum of X = 0
11	121	0	0	0	
12	144	0	0	0	N = 16
13	169	0	0	0	
14	196	0	0	0	
15	225	0	0	0	
16	356	0	0	0	
136	1496	0	0		

Table 3. Screen Three of the Template, "Futenrol"

GRAPH ITEMS		Graph Macro = [Shift] [Ctrl] G
0 F	78-9	
0 S		
0 F	79-0	/GRGTBXR4..R23~AP4..P23~
0 S		OLASemester Enrollment~TF\B1~
0 F	80-1	TSEnrollment History and Projections
0 S		TX78-86 = History; 86-88 = Projection
0 F	81-2	TYEnrollments~DAQ4..Q23~AQQV
0 S		
0 F	82-3	
0 S		Print Macro = [Shift] [Ctrol] = P
0 F	83-4	
0 S		/PPRA1..G25~GPQ
0 F	84-5	
0 S		
0 F	85-6	
0 S		
0 F	86-7	
0 S		
0 F	87-8	

Table 4. Screen One of a Completed Template.

COMMERCIAL ART -- City Park
ENROLLMENT HISTORY from Fall 1980 through Spring 1986 and
ENROLLMENT PROJECTION (Fall 1986 - Spring 1988) via LINEAR
REGRESSION
Formula: Projected Enrollment = (Slope * Semester) + Intercept
Y = AX + B

History		Projection	
Semester	Enrollment	Semester	Enrollment
Fall 1980	322	Fall 1986	279
Spring 1981	302	Spring 1987	276
Fall 1981	302	Fall 1987	273
Spring 1982	318	Spring 1988	270
Fall 1982	299		
Spring 1983	299		
Fall 1983	284		
Spring 1984	277		
Fall 1984	318		
Spring 1985	301		
Fall 1985	269		
Spring 1986	281		

Table 5. Screen Two of a Completed Template.

Linear Regression Formula Calculations

Sem. ("x")	x^2	y^2	x*y	Trended Datapoint		
1	1	103684	322	314		
2	4	91204	604	311	Slope =	-2.92
3	9	91204	906	308		
4	16	101124	1272	305	Intercept =	316.67
5	25	89401	1495	302		
6	36	89401	1794	299		
7	49	80656	1988	296		
8	64	76729	2216	293	Sum of Y =	78
9	81	101124	2862	290		
10	100	90601	3010	287	Sum of X =	3572
11	121	72361	2959	285		
12	144	78961	3372	282	N =	12
78	650	1066450	22800	3572		

Table 6. Screen Three of a Completed Template.

GRAPH ITEMS		Graph Macro = [Shift] [Ctrl] G
322 F	80-81	/GRGTBXR4..R19~AP4..P19~
302 S		OLASemester Enrollment~TF/B1~
302 F	81-82	TSEnrollment History and Projections
318 S		TX80-86 = History; 86-88 = Projection
299 F	82-83	TYEnrollments~DAQ4..Q19~AQQV
299 S		
284 F	83-84	
277 S		Print Macro = [Shift] [Ctrol] = P
318 F	84-85	
301 S		/PPRA1..G23~GOQ
269 F	85-86	
281 S		
279 F	86-87	
276 S		
273 F	87-88	
270 S		

Benefits Derived From Using Spreadsheets

The benefits of using Futenrol soon become obvious. One benefit of Futenrol is that administrators have all actual past and likely future enrollments on a single sheet of paper or on the screen (Table 4). One print out or display is all that is needed for enrollment planning. Having all the data enables administrators to make more reasonable estimates for future space requirements and faculty needs. A second benefit is the graph macro; it generates a simple bar chart which depicts a program or another condition in the institution at a glance. Administrators can easily make a xerox or transparency of it for an academic council or board of trustees presentation. A third benefit is its simplicity and ease of use. Once 1-2-3 is loaded, a few keystrokes create a clean copy of Futenrol. Entering the enrollment history data takes only a few minutes. A few additional keystrokes will produce both a printout of the screen with all the data and the graph. A fourth benefit is the adaptability of the template. With only a few minutes of effort, the template can be modified to handle one or more semesters of data. Moreover, the template can be used to make projections for any countable area of institutional operation, i.e. fall semester enrollments, first-time enrollments, majors, program completers, self-generated revenues, part-time faculty, or number of different courses offered. The template can use data recorded each week, month, semester, or year for a program, division, campus, or institution.

Cautions to be Observed Using Linear Regression

For those who will be using Futenrol (linear regression) a few words of caution are in order. First, the statistic assumes that future enrollments will adhere absolutely to the trend line established by all past enrollments entered into the template. The assumption is violated -- and the resulting projections are misleading -- when there is a radical fluctuation at either end of the enrollment history. This is where the old intuitive method can be of value. Likewise, if the data varies significantly up and down from one semester to another, or if history shows a major slump or peak, the assumption will again be violated. The trend should be consistent in order to be reliable; the statistic is a weaker predictor if enrollment history goes down for the first five semesters and then up for the next five. In addition, the assumption is violated if there is an event in the present that will nullify the past. For example, a steady demand for welders in the past is meaningless as a predictor of future demand if the local shipyard just closed last week!

The second precaution is that linear regression should not be used to project more than two semesters of future enrollment if there are only ten semesters in the enrollment history section. The statistic is generally not reliable if it is used to project for a longer period. Over-use of history data is comparable to predicting the weather four months from now two thousand miles away. The whole purpose of the statistic is to replace "gut feelings" with a reasonable probability. The template given

in Appendix A and portrayed in the tables violates this rule by projecting four semesters from ten. However, it does so for visual effect only and is not used for planning purposes. On our campus, the template is used to identify programs that may be in need of intervention and not to determine which programs need more faculty or space.

Administrators can make quality decisions only when they have adequate information at hand. The academic vice-president and campus deans at Delgado have found the template to be very useful. I hope you will also.

APPENDIX A: Template Cell Contents for "Futenrol"

```
B1: '[PROGRAM TITLE (Campus)]
A2: 'ENROLLMENT HISTORY from [term year] through [term year] and
A3: 'ENROLLMENT PROJECTION (term year -- term year) via LINEAR REGRESSION
A4: 'Formula:  Projected Enrollment = (Slope * Semester) + Intercept
C5: '      Y = AX + B

A7: '--------History--------
A8: 'Semester
A10: 'Fall   197
A11: 'Spring 197
A12: 'Fall   197
A13: 'Spring 198
A14: 'Fall   198
A15: 'Spring 198
A16: 'Fall   198
A17: 'Spring 198
A18: 'Fall   198
A19: 'Spring 198
A20: 'Fall   198
A21: 'Spring 198
A22: 'Fall   198
A23: 'Spring 198
A24: 'Fall   198
A25: 'Spring 198

B8: "Enrollment

D7: ^------Projection------
D8: 'Semester
D10: 'Fall   198
D11: 'Spring 198
D12: 'Fall   198
D13: 'Spring 198
D15: 'Author:  Dr. George L. Findlen
D16: '         Curriculum Development
D17: '         Delgado Community College
D18: '         501 city Park Avenue
D19: '         New Orleans, LA 70119
D20: '         (504)483-4040

E8: 'Enrollment
E10: (F0) ($O$3*15)+$O$5
E11: (F0) ($O$3*16)+$O$5
E12: (F0) ($O$3*17)+$O$5
E13: (F0) ($O$3*18)+$O$5

H3: 'Sem.("X")
H4: 1
H5: 2
H6: 3
H7: 4
```

```
H8: 5
H9: 6
H10: 7
H11: 8
H12: 9
H13: 10
H14: 11
H15: 12
H16: 13
H17: 14
H18: 15
H19: 16
H20: ^---------
H21: @SUM(H4..H19)


I3: "X^2
I4: +H4*H4
I5: +H5*H5
I6: +H6*H6
I7: +H7*H7
I8: +H8*H8
I9: +H9*H9
I10: +H10*H10
I11: +H11*H11
I12: +H12*H12
I13: +H13*H13
I14: +H14*H14
I15: +H15*H15
I16: +H16*H16
I17: +H17*H17
I18: +H18*H18
I19: +H19*H19
I20: ^---------
I21: @SUM(I4..I19)

J1: 'LINEAR REGRESSION FORMULA CALCULATIONS
J3: "Y^2
J4: +B10*B10
J5: +B11*B11
J6: +B12*B12
J7: +B13*B13
J8: +B14*B14
J9: +B15*B15
J10: +B16*B16
J11: +B17*B17
J12: +B18*B18
J13: +B19*B19
J14: +B20*B20
J15: +B21*B21
J16: +B22*B22
J17: +B23*B23
J18: +B24*B24
J19: +B25*B25
J20: ^---------
J21: @SUM(J4..J19)


K3: "X * Y
K4: +H4*B10
K5: +H5*B11
K6: +H6*B12
K7: +H7*B13
K8: +H8*B14
K9: +H9*B15
K10: +H10*B16
K11: +H11*B17
K12: +H12*B18
K13: +H13*B19
K14: +H14*B20
K15: +H15*B21
K16: +H16*B22
K17: +H17*B23
K18: +H18*B24
K19: +H19*B25
K20: ^---------
K21: @SUM(K4..K19)
```

```
L3: 'Trended Datapt.
L4: (F0) ($O$3*H4)+$O$5
L5: (F0) ($O$3*H5)+$O$5
L6: (F0) ($O$3*H6)+$O$5
L7: (F0) ($O$3*H7)+$O$5
L8: (F0) ($O$3*H8)+$O$5
L9: (F0) ($O$3*H9)+$O$5
L10: (F0) ($O$3*H10)+$O$5
L11: (F0) ($O$3*H11)+$O$5
L12: (F0) ($O$3*H12)+$O$5
L13: (F0) ($O$3*H13)+$O$5
L14: (F0) ($O$3*H14)+$O$5
L15: (F0) ($O$3*H15)+$O$5
L16: (F0) ($O$3*H16)+$O$5
L17: (F0) ($O$3*H17)+$O$5
L18: (F0) ($O$3*H18)+$O$5
L19: (F0) ($O$3*H19)+$O$5

N3: "Slope =
N5: 'Intercept =
N9: 'Sum of X =
N11: 'Sum of Y =
N13: 'N        =

O3: (F2) ((O13*K21)-(O11*O9))/((O13*I21)-(O9*O9))
O5: (F2) (O11/O13)-(O3*O9)/O13
O9: @SUM(H4..H19)
O11: @SUM(B10..B25)
O13: @COUNT(H4..H19)



P4: @IF(B10>0,B10,0)
P5: @IF(B11>0,B11,0)
P6: @IF(B12>0,B12,0)
P7: @IF(B13>0,B13,0)
P8: @IF(B14>0,B14,0)
P9: @IF(B15>0,B15,0)
P10: @IF(B16>0,B16,0)
P11: @IF(B17>0,B17,0)
P12: @IF(B18>0,B18,0)
P13: @IF(B19>0,B19,0)
P14: @IF(B20>0,B20,0)
P15: @IF(B21>0,B21,0)
P16: @IF(B22>0,B22,0)
P17: @IF(B23>0,B23,0)
P18: @IF(B24>0,B24,0)
P19: @IF(B25>0,B25,0)
P20: (F0) @IF(E10<>0,E10,0)
P21: (F0) @IF(E11<>0,E11,0)
P22: (F0) @IF(E12<>0,E12,0)
P23: (F0) @IF(E13<>0,E13,0)

Q2: 'GRAPH STUFF
Q4: 'F
Q5: 'S
Q6: 'F
Q7: 'S
Q8: 'F
Q9: 'S
Q10: 'F
Q11: 'S
Q12: 'F
Q13: 'S
Q14: 'F
```

```
Q15: 'S
Q16: 'F
Q17: 'S
Q18: 'F
Q19: 'S
Q20: 'F
Q21: 'S
Q22: 'F
Q23: 'S

R4: "   78-9
R6: "   79-0
R8: "   80-1
R10: "   81-2
R12: "   82-3
R14: "   83-4
R16: "   84-5
R18: "   85-6
R20: "   86-7
R22: "   87-8


T2: 'Graph Macro = [Shift][Ctrl] G
T4: '/GRGTBXR4..R23~AP4..P23~
T5: 'OLASemester Enrollment~TF\81 -
T6: 'TSEnrollment History and Projections~
T7: 'TX78-86 = History; 86-88 = Projections ~
T8: 'TYEnrollments~DAQ4..Q23~AQQV

T11: 'Print Macro = [Shift][Ctrl]   P
T13: '/PPRA1..G25~GPQ
```

When finished typing the above cell entries file the spreadsheet under the name "Futenrol."

APPENDIX B: Instructions for Using the Enrollment Projection Template

What follows presumes a minimum ability to use Lotus 1-2-3.

Using the Template As-Is

1. Retrieve the template.
2. Go to cell B1. Type in the program title in caps as a left-aligned label. (Doing so will replace "[PROGRAM TITLE (Campus)].")
3. Go to cell A2; edit the line to delete each "[term year]" and replace them with the semester and year that your enrollment history begins and ends.
4. Go to cell A3; edit the line to delete each "term year" and replace them with the semester and year that the projection beings and ends. (Retain the parentheses.)
5. Go to cell A10; edit the line to complete the date. Edit the remaining thirteen lines in column A in the same way. (If you do not have enrollment data as far back as Fall 1978, Range-Erase A10..A13 and Move A14..A25 up to A10..A21. See "Changing the Template for More/Fewer Semesters" for other changes.)
6. Go to cell D10; edit the line to complete the date. Edit remaining three lines in the column in the same way.
7. If you do not have data going back to the Fall 1978 semester, go to cell R4; edit the line to make it correspond to cells A10 and A11. That is, if the cells A10 and A11 are Fall 1978 and Spring 1979 respectively, then cell R4 should be 78-9. Edit all the remaining lines in the column in the same way. Each cell in column R identifies an academic year listed in column A.
8. If your enrollment history data does not begin with the Fall 1978 term, go to cell T7 and edit the line to make it reflect the years you actually use. Likewise, go to cells T4, T8 and T13 and edit them to reflect the range you will use.
9. Go to cell B10; enter the enrollment for that term. Complete the column. Note that projections in column E will automatically change with each new entry in column B. (The same is true for columns J, K, L, M, O, and P.)
10. When finished data entry for column B, [Ctrl][Shift] P will print the first screen with the data (range A1 through G20), and [Ctrl][Shift] G will produce a bar graph. (See ranges T2..T8 and T12..T14.) Be sure to /Range Name Create the first cell of the macro (T2); the template is set up for \G as its name. Do the same for cell T11 which is set up for \P. (NOTE: the macro keys may be different on other keyboards; I am using a DEC. If the macro keys are different on your PC, edit cell T2 accordingly.) Save the graph and print it using Lotus' Printgraph.

Changing the Template for More/Fewer Semesters

1. Add more semesters by lengthening column A or columns D and E; delete semesters by shortening column A or columns D and E. (I recommend against using fewer than ten semesters of enrollment history: the resulting projections may not be reliable with fewer.)

2. Change the semester number on each line of column E's formulae. (The semester number follows the asterisk. See the text at cell A4.) The semester number in cell E10 must always be one more than the number of semesters of data in column A; the semester number in cell E11 must always be one more than that, and so forth.

3. Add or subtract lines from columns H, I, J, K, L, P, and R. To add lines, first use the Move command to drop the dotted and SUM lines (H19..L19) down, then use the Copy command to copy the formulae from the last line to the new ones for H, I, J, K, and L. You will have to add to columns P and R row by row. To delete lines, first use the Range Erase command to delete the lines you do not want (starting at H17..L17 and going upward), then use the Move command to relocate the dotted and SUM lines. Correct the SUM line to reflect the new number of lines in the column.

4. Change some of the column 0 formulae. Change nothing in the Slope and Intercept formulae. For the Sum of X, Sum of Y, and N formulae, change only the second row number in each, in order to reflect the range used.

5. Change the range addresses and years in the macro in column T to correspond with changes in your data columns.

6. Good luck!

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CURRENT ISSUES IN COMMUNITY COLLEGE RESEARCH

Darrel Clowes, Editor

"Proving our worth" as educational institutions is now as much a part of the community college educational process as making class schedules and hiring faculty. In the first article, Janis Cox Coffey, a regular contributor to the journal, presents a student flow model with four components: (1) Potential Students, (2) Enrolled Students, (3) College Experience, and (4) Former Students. Use of this model can help colleges defend their actions to citizens and legislatures with clearly stated results.

The second article in this section calls our attention to an area in which community colleges have been slow to respond - economic development. A few community colleges have done some excellent work and have made significant strides in stimulating economic growth in the community. Pueblo Community College has been a leader in this field. The college President, Tony Zeiss describes what an institution can do to aid the community in economic growth and development.

PROVING WHAT WE'RE DOING IS WORKING: THE STUDENT FLOW RESEARCH MODEL

Janis Cox Coffey

The Era of Accountability

Quality indicators. Student outcomes. Measures of accountability. Evaluation criteria. Performance-based funding factors. Whatever you call it, the concern for educational effectiveness is surfacing as the new focus for higher education in general and community colleges in particular. To an extent heretofore unknown, we are being asked to demonstrate to increasing numbers of local constituencies and state interests whether what we are doing is working and how we know.

This has been particularly true in California. Over the past four years there have been several analyses of the mission and performance of California's community colleges. At the state level, the Commission for the Review of the Master Plan for Higher Education (the "Master Plan Commission"), the California Business Roundtable, and the Joint Legislative Committee for Review of the Master Plan, have all issued reports on the state of the state's 106 community colleges. In each case, the authors of the studies criticized the dearth of information relating

to institutional effectiveness and student success. The Master Plan Commission, commenting on the need for such information, stated:

> Institutional research is essential to determine which types of programs work best with which students under what circumstances, and to ensure the wisest use of public funds in meeting student and community needs. There is relatively little statewide institutional research available to evaluate the effectiveness of Community College transfer, vocational, or remedial programs, which are of particular concern to this Commission. If these programs are to be implemented successfully and cost-effectively, they must be accompanied by research and evaluation from the start, to strengthen these programs as they develop as well as to evaluate their ultimate merit. Significant additional funds will be needed for this research.

The Chief Executive Officers and the Trustees of the California Community Colleges issued a paper calling for development of a shared governance model through which districts and colleges would be held accountable for achieving specific results in a variety of areas. They emphasized that:

> truly effective accountability will establish clear lines of communication and cooperation between the state and local boards, providing for sound, accountable approaches to planning, resource allocation, data collection and analysis, and evaluation of results.

Key to this view of accountability is the availability of solid research information that can assess to what extent results are being achieved. As Joshua Smith, Chancellor of the California Community Colleges, pointed out:

> Nothing is more critical to our future than to demonstrate clearly. . .that the community colleges make a qualitative difference in the lives of more than a million California citizens each year. . .The Governor and the Legislature want to know what California is buying for the 1.8 billion dollars spent each year in the colleges.

As a result of all this work, a number of legislative initiatives have now been introduced to link community colleges' educational outcomes to their fiscal futures. While arguments about the appropriate measures abound, one thing is clear: we can no longer just assume legislative and public support for what we're doing. The new reality facing those of us in community colleges is that of accountability for our educational effectiveness.

While some of the impetus had clearly been external, each of the critical reassessment studies cited individual districts whose solid research programs made it relatively easy for them to answer questions about their institutional effectiveness in terms of student success. Information from these local districts was used in State policy decisions since it was often the only information available. One such district whose student outcome information has been cited repeatedly at the state level is the Los Rios Community College District in Sacramento, California.

Genesis of the Student Flow Model

In 1983, considerably before the current emphasis on accountability, the Los Rios district began to build what would later come to be known as the "student flow research model." Given the district's major emphasis on using research for planning and decision-making, we sought a model that would bring together information in four critical areas: (1) characteristics of the district's service area population; (2) characteristics of the entering student population; (3) evaluation of student performance, programs, and services; and (4) follow-up of transfer, occupational, and nonreturning students.

We intended that the research produced in these four areas would answer a series of seven key questions, questions we thought any district or college should be able to answer:

1. What is our community like and who are our potential students?
2. Who are our enrolled students? Do they differ by college? Do they reflect the community at large?
3. What kinds of preparation do our students bring to our institutions? Are they prepared for our college-level classes or do they need remediation?
4. What are the educational goals of our students and do these goals differ by age, sex, ethnicity, work status, or economic level?
5. How well are we meeting our students' needs? Is what we're doing working and how do we know?
6. What happens to our students once they leave? Are they successful as transfers to four-year institutions? In finding jobs? In improving skills and potential if currently employed?
7. Finally, how can we improve what we're doing?

Much of the information needed to answer these questions resided in our district's mainframe computer--the question was how to extract the data, analyze it, summarize it and make it easily accessible and useful to key decision-makers who had little interest in reading reams of computer-generated printouts. We decided early in the process to keep the questions and answers primary and the data secondary. In short, we didn't ask "what can we do with all this data?" but "what questions do we want to answer about our students, our programs, our services?"

Through judicious use of the statistical program SPSS-X, we have designed studies and generated data that could answer the seven key questions. Sometimes special surveys--such as those for our student follow-up studies--have been designed and used to supplement our historical and current student data files. Data generated from special studies such as our longitudinal transfer student project--which re-

quires matching and analysis of data tapes from the primary universities to which our students transfer--are combined with our historical student data files so we can analyze transfer student preparation, persistence and performance.

Components of the Model

The basic components of the student flow research model include: (1) the community--our potential students; (2) enrolled students; (3) the college experience; and (4) our former students. What these individual components include and how they can be combined to answer the seven questions is discussed below. A graphic illustration of the model and the kinds of information included is presented in Figure 1.

The Community: Our Potential Students

In looking at our community--our potential students--we analyze the key demographic factors of the changing age of the population, the gender and ethnic mix, the educational levels and English proficiency of people living in our district and college service areas. Much of this information comes from the 1980 Federal Census and is supplemented by more recent information whenever possible. We also gather labor market information, using federal, state, and local labor market publications, supplemented by our Regional Employment and Training Needs Assessment (RETNA) project data base. Information on community income levels and on areas with high numbers of families receiving Aid to Families with Dependent Children (AFDC or "welfare") is also analyzed to provide a picture of areas that might require special services.

Enrolled Students

Once the community information is assimilated, we compare that data to the information on our currently enrolled students to determine whether we are under-serving any particular groups. We analyze our student data in a variety of ways--by age group, gender, ethnicity, and unit load status and often by combinations of these variables. We examine the educational preparation of our students, their previous college work, their educational goals, financial aid status and English proficiency. With such information matched to our community information, we are in a better position to answer questions about the success of our various programs in meeting educational needs in the low-income or minority communities. By examining historical trends on an annual basis, the district is able to analyze changes in its student clientele that may warrant changes with respect to when, where and how we offer our programs services. In addition, differences in the student clienteles of our three district colleges can be determined and appropriate alterations made so that each college can be flexible in meeting the needs of its own student population.

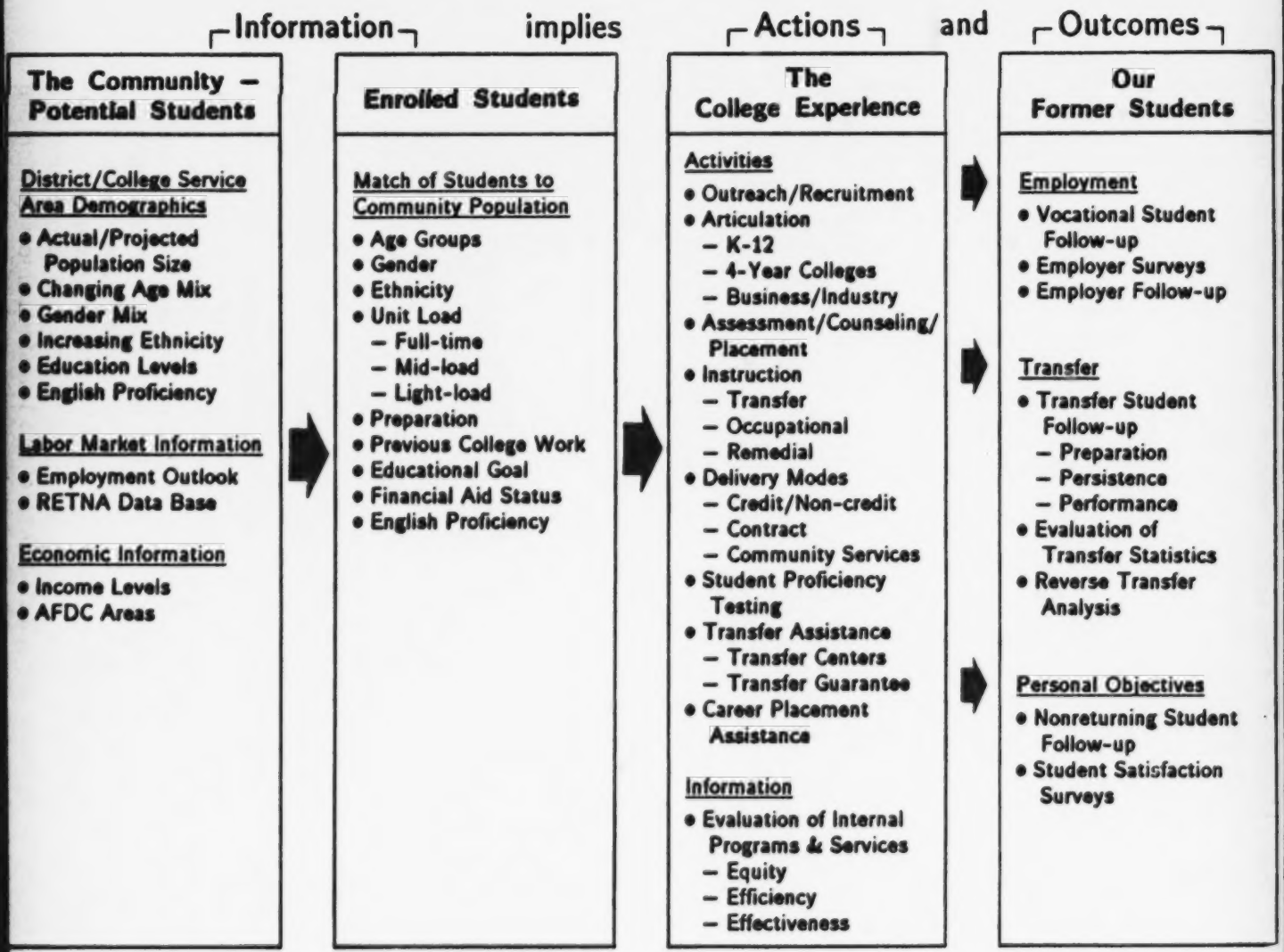

FIGURE 1. Los Rios Student Flow Model

The College Experience

This component of the model includes information on our internal programs and services, essentially the "activities" a student participates in once she or he enters one of our colleges. From initial out-reach and recruitment activities, through our assessment/counseling/placement programs, and on into transfer, occupations or remedial instruction, the student flow model is a means of understanding how students move into and through our institutions--and what happens to them while they are here.

Like many other districts, our analysis of student outcomes is still in its beginning stages, but measures of student performance, persistence, achievement and satisfaction are taken at various times and are linked back to programs and services in order to evaluate their effectiveness. Such outcome information establishes a base for determining whether particular programs are actually achieving what they set out to do, and may suggest curriculum changes or alterations in instructional technique. As measures of program equity, efficiency and effectiveness become more widely known and used, they can form a solid foundation for instructional planning and program review.

Follow-up on Former Students

The real key to demonstrating that what we're doing is working is the student and his or her success in meeting transfer, occupational or personal objectives. The Los Rios District conducts a major follow-up survey every year of all those students who have completed a degree or earned an occupational program certificate, as well as of a sample of "nonreturning" students. Now in its fourth year, the student follow-up survey provides a wide variety of information on our former students' success as either transfers to a university or as workers in the occupation of their choice. Student responses are available by college and program, for use by deans and faculty in program review and development.

In addition to the annual student follow-up studies, a number of special reports have focused on our transfer students' success. An annual report on the number of Los Rios transfers to the University of California and the California State University systems is produced, with the results analyzed by sex and ethnicity and compared to other community college districts statewide. A longitudinal study of the relative success of our Fall 1980 transfers at the two primary universities to which they transferred was completed in 1985 and will soon be replicated. A special survey of students who utilized the new transfer centers at each of our three colleges has just been completed and has helped to evaluate the effectiveness of the transfer centers (which are part of a statewide pilot program) in improving both the numbers and the performance of student transfers.

Uses of Information

As the student flow research model had been improved and modified over time, so have our abilities to present and use the information for planning and decision-making at the district and college level. Information on our occupational students' success has been shared with the Board of Trustees, the occupational education deans, and with faculty at the program level. The information on our transfer students' success has been widely shared at both college and district levels and our one-page "Transfer Outcomes" summary is used by counselors in their outreach and recruitment efforts. Information on our "nonreturning students" proved that they were highly successful in getting what they came for--most often, one or two courses related to their jobs. They were essentially "drop-ins," not "drop-outs," and this information has been used in curriculum review and program development.

In every study, we not only publish a formal report, but include an executive summary (1 or 2 pages), and a series of presentation overlays and graphics that can be used with a variety of audiences. We also try to get our "results" or "outcomes" into an easily understandable, one-page format. For example, our "Transfer Outcomes" page includes summarized data from three different studies that answer such questions as "How many students transferred?", "What did they think about their preparation at Los Rios?", "How did they do in the universities compared to native university students?" In addition to using such information internally, we have also been asked to share it with state-level decision makers, including members of the Legislature, the Master Plan Commission, the State Chancellor's Office, and the California Postsecondary Education Commission.

Institutional Benefits: Proving the Point

The ability to demonstrate improvement in educational practices, to follow students through our colleges' programs and on into employment or a four-year institution, has both internal and external benefits for our colleges. Internally, you can assess which teaching strategies are working best with which types of students, which programs are articulating well with those at the high school and four-year institutions, and whether what you're doing in areas such as assessment and remediation is having the desired effect of improving student performance. Externally, with such institutional research you can prove to your local board, the general public, the Legislature, and to others at the state level that your programs are effective, are benefiting students and society alike, and are a wise expenditure of public funds. Had California's community colleges been able to do this over the past years, it is quite likely there would have been far less legislative and public criticism--and far more money.

If our future in the community colleges is to continue to be measured and evaluated--and there is ample evidence to suggest it will be--we must be in a position to help determine the types of criteria by which we will be judged. Increasingly, these decisions are being made in state offices or legislative halls, with little or no involvement from the local level. Given the diversity of our colleges and their communities--indeed the diversity of the communities even within a single college's service area--the best means for achieving the specific results desired may well differ from college to college. If we wish to keep our unique community orientation, we must be in a position to defend it with clearly stated results. The student flow research model has helped us clarify in our district that we are successful in meeting the needs of our community and our students--and we can prove it.

References

Commission for the Review of the Master Plan for Higher Education (1986). The challenge of change: A reassessment of the California community colleges. Sacramento, CA: State of California.

Smith, Joshua. (1986, April 18). Developing policy through research. Paper presented at the California Association of Community Colleges Research Conference, Asilomar, CA.

California Community Colleges Trustees and California Community Colleges chief Executive Officers. "A new partnership in governance." October 10, 1986.

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USING RESEARCH TO STIMULATE LOCAL INITIATIVE FOR ECONOMIC DEVELOPMENT

P. Anthony Zeiss

Introduction

In only thirty-six months, Pueblo Community College has directly contributed to the creation of about 3,000 new jobs in its community. These jobs represent an annual economic impact of 97,350,000 dollars. This small, comprehensive two year college in Pueblo, Colorado decided to become uniquely involved in economic development in 1982. During that year Pueblo's steel mill and a meat packing plant dismissed nearly 4,000 workers and unemployment rose to 22 percent. In May of the following year the college opened a Center for Small Business which has been providing small business one-on-one technical assistance and customized large business assessment and training services on an accelerating scale.

The college's successful role in economic development did not happen overnight. Instead, the involvement of the college in economic development grew out of a proven community need, and extensive planning and research which allowed college officials to make intelligent decisions regarding a proper course of action.

The college utilized the following process model for developing and monitoring its role in economic development. It can be very effective if used consistently:

Step 1. Identify the need or problem
Step 2. Gather pertinent and valid data
Step 3. List and evaluate alternatives
Step 4. Select best alternatives or opportunities
Step 5. Develop an action plan
Step 6. Monitor, Evaluate and publicize Results

Much of the school's success in economic development programs and services can be attributed to the vast amount of research and planning that went into the project.

The benefits of the school's economic development activities have been significant and immediate. The Colorado Commission on Higher Education, the umbrella governing agency for higher education in Colorado, reports that of all public colleges and universities in the state, Pueblo Community College had the highest percentage enrollment increase in 1984-1985 and has had the highest job placement rate for the past five years. The advantages of such close involvement in community growth have been especially apparent in: (1) the development of a

strong public image, (2) increasing student enrollments and job placements.

The college's center for small business success grew from the creation of fifty-seven new small businesses and significant services to seventy-one existing small businesses representing 294 full-time jobs and 87 part-time jobs within the first forty-eight months of operation.

Additionally, two new Sperry (Unisys) Corporation high-tech plants, a Dayton Hudson (Target) Warehouse activity, a precision plastics company, two McDonnel Douglas launch vehicle plants, a precision manufacturing plant and numerous smaller companies have moved to Pueblo. Other companies including B.F. Goodrich, Kaiser AreoTech Corporation, a Trane Corporation Division, and a high-tech robotics company have announced their intention to move to Pueblo, Colorado.

Marketing Assistance Provided by the College

The college has played a major role in these successes by making onsite, Advance Team presentations in several different states, by arranging for free assessment and training services via State and Federal grant funds, and by providing customized competency-based assessment and training programs for the new industries. Pueblo's unemployment is now at 8.8 percent, down over half from the previous rate. The entire community is now experiencing a major upswing in the economy. The college has positioned itself as a significant element in its community's progress and has gained the respect of educators, politicians, and business leaders throughout the State. The current community stature that Pueblo Community college now enjoys can be tied directly to its need-based and thoroughly researched economic development activities.

Economic development is a current and much discussed subject these days. Article after article has been written about the need for small business expansion and the diversification of a community's economic base. Clearly, the nation's economic base is only as strong and stable as the collective economic base of this country's communities. Further, a nation's economic well being is intrinsically linked to its educational system, yet few colleges appear to be taking a leading role in the job development business. The problem has been identified, but little has been written about exemplary community initiatives which are working successfully. The model economic development initiative which has been successful in Pueblo, Colorado has the potential of also being successful in similarly depressed communities.

Program Development Designed to Combat Unemployment

Specifically, Pueblo Community College took the initiative to help spearhead an exemplary program for rendering assistance to new and existing entrepreneurs in its three county service area. The initial catalyst for developing the Pueblo initiative in the economic development arena resulted from the ominous atmosphere which existed during the Fall of 1982 at a Pueblo Chamber of Commerce retreat. The City of Pueblo has traditionally been a large-business town sustained primarily by steel manufacturing. As the steel industry nose-dived unemployment soared to over 20 percent and the community began to experience a declining growth atmosphere. In view of this economic recession, Pueblo Community College, local civic leaders, and the Pueblo Economic Development Corporation resolved, in typical entrepreneurial spirit, to become "vendors of services" and not merely partners with industry.

The primary motivation behind this community action was the very real need to solve the unemployment problem in the local area. Extensive review of the literature and a community needs assessment substantiated the belief that the development of a stable economy was dependent upon the expansion and diversification of businesses, i.e., mostly small businesses.

The research indicated that two fundamental, prescriptive elements were necessary for solving unemployment: (1) the creation of jobs and, (2) proper labor force training. The college realized that both elements had to be addressed simultaneously; these two activities could not be expected to produce acceptable results independently. Further, it was clear that both activities were dependent upon the cooperation, enthusiasm, and goodwill of the people, industry, government, and training institutions of the community. It was equally clear that there was basically only two ways to obtain new jobs for the community: (1) grow your own or (2) recruit them from some other area. The college resolved to become deeply involved in both arenas.

Growing Your Own Jobs

The first element involved the need for a local initiative designed to expand and diversify the community's economic base via the growth and development of small businesses. An emphasis was placed upon developing and expanding businesses which would market goods and services outside of the community's immediate economic market sphere.

In the Fall of 1982 the community college joined with local community leaders and the Pueblo Economic Development Corporation in the exploration of feasible, practical, and workable assistance models which would foster the retention and development of small businesses. A number of economic development models were reviewed, researched, and considered. Finally, a comprehensive community assessment

study was conducted by the Control Data Corporation, and the results of that study were used largely in the development of the model initiative that is in successful operation today. This model initiative is appropriately titled the Pueblo Business Assistance Network.

The Pueblo Business Assistance Network (PBAN) is unique by its very nature. PBAN provides a unified network of services for virtually the entire community and consists of four major assistance groups:

1. An intake and assistance center - the Myer's Center for Small Business
2. A cooperative volunteer assistance group - Pueblo Cooperation Office, Inc.
3. A seed/venture capital investment fund - The Pueblo Growth Corporation
4. An incubation facility to support new businesses - The Business and Technology Center.

Myer's Center for Small Business

A comprehensive intake center was developed and put into operation on May 27, 1983 by Pueblo Community College. In its first four years of operation, the school's Myer's Center for Small Business experienced 555 requests for assistance. These requests resulted in direct consulting services for 321 persons and 128 businesses which had either newly opened or had received some significant assistance. Area financial institutions helped to develop the center's self-paced business plan module and often refers loan applicants to the Center for appropriate assistance. Further, the city of Canon City, 36 miles to the west of Pueblo, requested the community college to establish a duplicate Center for Small Business and a cooperative volunteer group. This is currently being satisfied on a regular schedule in cooperation with the city's Chamber of Commerce. The Center is an integral part of the college's business division and provides expert assistance in business plan and financial plan development, and provides numerous training seminars on practical management and marketing principles. The most recent endeavor of the Center has been the production of a series of television programs on small business operation.

Cooperation Office

A non-profit cooperative volunteer assistance group, consisting of dozens of volunteers from numerous professions, was formed in the Spring of 1983 as the Pueblo Cooperation Office, Incorporated. The primary purpose of this group is to provide in-depth assistance via practicing professionals. Typically, as a client progresses through the formation of a business plan at the Myer's Center for Small Business, specific needs are identified which require the expertise from volunteer

professionals. To date the Cooperation Office has logged over 1200 man hours of assistance to entrepreneurs and has been responsible for several major business expansions.

Pueblo Growth Corporation

A third dimension of the economic development process involved the need for a seed/venture capital fund since usual financial institutions do not lend money to high risk entrepreneurial-type ventures. A survey of lending institutions in the Pueblo area revealed that there was little or no capital to be borrowed on a non-secured basis. As a consequence, several community leaders developed and incorporated a community-based private for profit seed/venture investment fund incorporated as the Capital Ideas Fund. Basically, the fund was designed to render financial assistance to any new or existing small business that (1) was based in Pueblo County and, (2) would create jobs via the exportation of goods and services. Revenues for the fund were raised through an initial private stock offering. The corporation is currently attempting to increase its revenues and public involvement via a public offering of stock sales. To date, the fund has screened approximately 90 entrepreneurial ideas and has participated in the funding of three new small businesses; two light manufacturing companies and a meat processing company. The Capital Ideas Fund, now known as the Pueblo Growth Corporation, was incorporated in June, 1983.

Business and Technology Center

The fourth, and equally important part of the Pueblo Business Assistance Network, is the incubation facility, called the Business and Technology Center. This facility is currently in operation by the Pueblo Economic Development Corporation,. Creation of the facility involved the purchase and renovation of a 40,000 square foot building in downtown Pueblo. The Center has been modeled after the highly successful incubation facilities developed and operated by the Control Data Corporation at numerous locations across the United States. The Center is designed to provide affordable technical assistance and low overhead costs to new small businesses when cash flow is most critical. The cost-pooling of secretarial, telecommunications, and copying services provides an economically conducive atmosphere for the new businesses which locate in the building. The facility was created with the financial assistance of the U.S. Economic Development Agency and currently houses twenty-one new small businesses.

Industrial Recruitment and Training

The second element which requires the assessment and training or retraining of a proper labor force, primarily involves the community college. Pueblo Community College has also publicly voiced its commitment to this activity, and began offering fast-track courses in 1982,

increased its course schedules to accommodate shift workers, and recently revalidated every course competency to insure the delivery of current and practical training. The college has made on-site out-of-state presentations of its customized assessment and training services to numerous large and small corporations, fifteen of which have already decided to relocate in Pueblo. The college is actively involved in the preparation and delivery of customized assessment and training proposals to nearly every industry targeted by the Pueblo Economic Development Corporation. The college has already trained over 1600 people in electronic, mechanical, and electrical assembly, and warehousing skills to meet the needs of Pueblo's new industries. The college is currently engaged in eight industry-specific, customized training programs plus a fast-tracked Criminal Justice Program designed for the Colorado Department of Corrections. The college has placed over 1500 industry-specific Fast-Track Trainees in new jobs since August, 1984.

SUMMARY

It is recognized that this model initiative may not be the panacea for the unemployed or a solution for all community economic ills. It is further recognized that community colleges must also continue to attend to the educational needs of our youth. However, it is this writer's opinion that America's greatest challenge, that of capturing and creating new economic markets and providing a trained labor force for these new jobs, must be a top priority if this nation is going to remain a world leader. We can no longer sit idly by and expect unemployment and economic development to take care of itself. In short, community colleges must begin to participate in job development as well as in job training. These issues need to be addressed quickly and positively through the cooperative efforts of the community college and local initiatives. Pueblo is just one example of what can be done when the need arises. The implementation of such initiatives, of course, is dependent upon the recognition of the problem and the interest generated in each community.

Community colleges are uniquely suited to play a major role in the economic development efforts of their communities. A sound strategy for such involvement, however, must be based upon solid and practical research. Specifically, a thorough review of the literature and on-site visits to successful economic development initiatives is highly recommended. Equally important is a practical needs assessment based upon local data from the community. Finally a concept paper should be developed from this background data with the college's internal and external publics providing input. Ultimately a technical paper, which outlines the college's and the community's economic development objectives and strategies, should be formulated and should serve as the cornerstone of the area's economic development activities.

The challenge, the opportunity and the responsibility to expand our role as community and junior colleges is at hand. We dare not be complacent. We must not miss this timely opportunity to serve our

communities and our nation through the economic challenges that lie ahead.

P. ANTHONY ZEISS, is President of Pueblo Community College, Pueblo, CO 81004. He is a Past President of the National Council for Research and Planning.

Community College Journal for Research and Planning
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AN ERIC REPORT

RECENT RESEARCH ON COMMUNITY COLLEGE DEVELOPMENTAL/ REMEDIAL PROGRAMS

Diane Zwemer

What are the characteristics of students enrolled in developmental courses? How well do remedial students perform in other courses? How can learning be assessed in developmental programs? These are a few of the questions addressed in the following sample of recent additions to the ERIC collection concerning developmental/remedial education.

Full text copies of these and other ERIC documents can be ordered through the ERIC Document Reproduction Service (EDRS) in Alexandria, Virginia, or can be obtained on microfiche at over 700 libraries across the country. For an EDRS order form and/or a list of the libraries in your state that have ERIC microfiche collections, please contact the ERIC Clearinghouse for Junior Colleges, University of California, Los Angeles, 8118 Math Science Building, Los Angeles, CA 90024.

Gainous, F. and others. Remedial/Developmental Student Characteristics Survey, Fall 1985: Kansas Community Colleges. Topeka: Kansas State Department of Education, 1985. 42 pp. (ED 273 329).

After discussing the role of Kansas's community colleges in providing remedial/developmental education, this report presents data on the characteristics of students enrolled in remedial/developmental courses. Highlighted findings include the following: (1) 8% of all students enrolled in the community college system were enrolled in remedial/developmental courses; (2) an average of 166 students per institution were enrolled in remedial/developmental courses; (3) of remedial/developmental students, 49% were male and 51% were female; (4) 62% of the students were in the age categories between 17 and 22 years of age, with the largest age category, 18 to 19, containing 39% of all remedial/developmental students; (5) 74% of all male and 52% of all female remedial/developmental students were in the 17 to 22 years of age categories; (6) ethnic/minority students constituted 24% of the total remedial/developmental enrollment; and (7) 41% of the remedial/ developmental students had academic majors. The survey instrument, recommendations regarding admissions and placement, and data on remedial/developmental students in universities under the jurisdiction of the Kansas Board of Regents are included.

Gainous, F. and others. Remedial/Developmental Programs in Kansas Institutions of Higher Education, Fiscal year 1985. A Supplemental Report Topeka: Kansas State Department of Education, 1986. 40 pp. (ED 276-474)

A study was conducted to compare remedial/developmental programs of study in the community college system of Kansas with those offered by the state's university system for the fiscal year 1985. Study findings included the following: (1) All of the Regents' universities and all of the state's community colleges offered remedial/ developmental courses: (2) the heaviest concentrations of remedial/developmental courses for both the universities and community colleges were in the content areas of mathematics, reading, and English; (3) 40% of the remedial students were enrolled in mathematics courses, 33% in English courses, and 19% in reading courses; (4) while in the Regents' system, slightly more remedial students were enrolled in the English content areas than other areas, in the community college system the overwhelming number of students were enrolled in the mathematics area; (5) 11,535 university students and 6,748 community college students were enrolled in remedial/developmental courses; (6) enrollment in remedial/developmental courses represented 16% of the total headcount enrollment for the universities and 16% of the enrollment for the community colleges; (7) 63% of the total remedial enrollment was in the universities, while 37% was in the community colleges; (8) remedial/development enrollment generated 40,721 student credit hours; and (9) the average number of students enrolled in remedial/developmental programs varied from 1,922.5 for the universities to 355.2 for the community college system. The bulk of the document consists of a series of data tables. An October 1986 report from the Kansas Legislative Research Department concerning remedial education courses offered by the Regents' institutions and community colleges is appended.

Harris, H.L. and Hansson, C.J. A Comparative Study of Students in English Preparatory Courses, Spring 1986. Sacramento, CA: Office of Research, Cosumnes River College, 1986. 24 pp. (ED 274 385)

In fall 1985, a study was conducted at Cosumnes River College (CRC) to obtain information about the college's PREP (Personal development, Reading/writing skills, Educational goals, and Preparing for the future) program. Follow-up data was obtained on students who have enrolled in remedial and non-remedial courses, and enrollment data on remedial students and PREP participants. The study sample was drawn from students who were tested by the CRC Assessment Center during spring and fall 1983, including 50 students who took no remedial English courses, 50 who took remedial English, 25 who were enrolled in developmental writing and 25 who were enrolled in the PREP program and remedial English courses. Study findings included the following: (1) Hispanic and Blacks were over-represented in the study sample in comparison to the CRC population as a whole; (2) the mean grade point average (GPA) for the entire sample was 1.80; (3) 66% of students in the

remedial group had GPAs of 2.0 or better compared to 26% of the non-remedial group; (4) by fall 1985, 90% of the remedial group had completed 12 or more units, compared to 34% of the non-remedial group; (5) for the performance measure of units completed, the strongest predictor variables were the number of English courses, enrollment status, and remedial courses; (6) in comparison to other remedial students, PREP students had greater gains in reading but lower gains in English; (7) 60% of the PREP students had GPAs of 2.0 or higher, compared to 72% of the non-PREP students; and (8) a greater percentage of non-PREP students than PREP students moved from remedial to college-level English courses.

Hild, H.N., ed. Developmental Learning: Evaluation and Assessment. NARDSPE Research Report, Number 1. Chicago: National Association for Remedial and Developmental Studies in Post-Secondary Education, 1982. 56 pp. (ED 274 381)

Three types of evaluation methods are discussed in terms of their use in evaluating both cognitive and affective learning in developmental programs: standardized tests; criterion-referenced tests; and naturalistic inquiries. Section I looks at the complexities of learning and the inherent difficulties in judging the quality and quantity of what is learned by students in developmental programs, and proposes a model that can be applied to the evaluation of learning in postsecondary development programs. Section II describes three general categories of tests (i.e., placement, diagnostic, and achievement) and specific types of tests (i.e., standardized, criterion-referenced, habit and attitude inventories, and teacher-made competency tests). These tests are analyzed according to their strengths, weaknesses, and uses. Additionally, Section II reviews several instruments that can be used in developmental programs, and Section III offers a rationale for the utilization of criterion referenced tests in developmental programs and offers suggestions for developing these tests. Section IV shows how unobstrusive or naturalistic methods of evaluation can be used to fill in the gaps left by other tests, including a definition of naturalistic inquiry and a description of its basic principles. Finally, a concluding section highlights major points and implications for the future of evaluation of developmental studies.

Marcotte, J. "The Impact of Developmental Education on the Graduation Rate of Students with Low Combined Differential Aptitude Test Scores." Unpublished report, 1986. 10 pp. (ED 271 172)

Since 1974, Cincinnati Technical College (CTC) had offered a Developmental Education (DE) program designed to upgrade students' skills in mathematics, reading, English, and basic sciences, as well as study and interpersonal skills. The DE program offers students, particularly those with low combined Differential Aptitude Test (DAT) scores, a multifaceted approach to learning involving individualized, self-paced courses; traditionally structured courses; peer tutoring services; learn-

ing laboratory instruction; and audio-visual tutorial programs. A study was conducted to examine the effect of the DE program on the graduation rates of students with low DAT scores. Of the 1,308 students served by the DE department between 1980 and 1984, 136, or 33% of those who actually started a college program at CTC graduated from CTC. Of these graduates, 77% entered the DE program with a DAT score below 50. The number of DE courses taken ranged form one to 13, with the average being two. Based on study findings, it was concluded that students who enter CTC with low DAT scores with the intention of graduating are capable of doing so at a rate consistent with students in other DE programs both nationally and state-wide when given the extra preparation afforded by the DE program.

Miles, C. and others. A Compendium of Up-to-Date Research on Topics Ranging from Software to Program Evaluation. NADE Research Report, Number 3. Chicago: National Association for Developmental Education, 1984. 78 PP. (ED 274 382)

This collection of essays focuses on various aspects of research and instruction related to developmental education. The collection includes: (1) "Evaluating Instructional Software for Developmental Education," by Curtis Miles, which includes information on types of microcomputer software, developmental student characteristics, microcomputer capabilities, and the evaluation process, as well as a form for evaluating software; (2) "Guidelines for Making Quality Presentations," by Anna M. Kowalczyk; (3) "Guidelines on Running Conferences," by Valeriana Brown; (4) "Program Evaluation: A Primer," by Darrel Clowes and Belinda Anderson, which begins with basic principles of evaluation, followed by an overview of the steps involved in evaluating developmental activities: (5) "Critical Issues and A Research Agenda for Developmental Education," by Darrel Clowes, which reports on a survey conducted to determine critical issues facing developmental educators; and (6) "Speaker/Consultants in the Field of Developmental Education," a directory complied by Sr. Mary Pardy.

ERIC materials are received from colleges, universities, research institutions, state agencies, and other education-related organizations and groups located throughout the country. The Clearinghouse invites reports on all aspects of community/junior college education. Please send two copies of each document you would like to have considered for the ERIC collection to our Documents Coordinator, ERIC Clearinghouse for Junior Colleges, 8118 Math Sciences Bldg., UCLA, Los Angeles, CA 90024.

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Community College Journal For Research and Planning
Volume 6, Number 1

COMMUNITY COLLEGE JOURNAL FOR RESEARCH AND PLANNING

PURPOSE

The COMMUNITY COLLEGE JOURNAL FOR RESEARCH AND PLANNING provides a forum for the exchange of information among members of the association and among professional colleagues in the field of research and planning. The Journal is multi-purpose and diverse in its articles and information; however, it is unified in its purpose to be of service to professionals working in the field of Community College research, management and planning.

The Journal is designed to provide an outlet for research and planners. It also serves as an information source for all elements of higher education interested in institutional management. The Journal meets a need to communicate the findings and achievements of research and planning professionals concerned with issues of importance to community colleges.

SUBSCRIPTION INFORMATION

The COMMUNITY COLLEGE JOURNAL FOR RESEARCH AND PLANNING is published biannually in the Spring and Fall by the National Council for Research and Planning. The Journal is distributed to all members of the National Council for Research and Planning as part of the $20.00 annual membership dues ($8.00 is in payment for subscription to the Journal). The Journal is available to non-members and institutions for $9.00 per year. Submit orders to: Jeff Seybert, Director, Research Evaluation and Instructional Development, Johnson County Community College, 12345, College of Quivira, Overland Park, KS 66210. Enclose payment with all orders, make checks payable to National Council for Research and Planning.

INSTRUCTIONS TO AUTHORS

All manuscripts will be reviewed and considered for publication. Manuscripts should be submitted in duplicate, double-spaced on 8 1/2 x 11 white bond and conform to the guidelines of the American Psychological Association Style Manual (3rd ed.), available from the American Psychological Association, 1200 17th St. N.W., Washington, DC 20036. Figures, charts and graphs should be submitted camera ready. Articles should serve the needs of community college research as stated in the purpose. Correspondence and manuscripts should be submitted to Edith Carter, Editor, Box 5781 Radford University, Radford, VA 24142.

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The COMMUNITY COLLEGE JOURNAL FOR RESEARCH AND PLANNING encourages the submission of research relevant to research and planning in the community college. Types of articles may include: the application or discussion of research and planning methodologies; creative approaches to research and planning problems; state of the art articles or current issues in community colleges, application of research and/or planning tools and trends or controversies in planning and research. Position papers and forecasting articles on major issues will be published when deemed apprpriate by the editor and editoral board. CCJRP seeks to publish articles which will assist researchers and administrators in planning and decision making and promote a better understanding of the purpose and goals of community colleges in higher education.

MANUSCRIPT SPECIFICATIONS

All manuscripts submitted for publication must conform to the guidelines of the Publications Manual of the American Psychological Association (3rd. ed., 1983). Manuscripts should be typed double-spaced on 8 1/2 x 11 inch paper. Subheadings should be used throughout the article to highlight particular areas of interest. All figures, charts, and graphs should be submitted camera ready. Articles should be edited to conform to a journalistic writing style. Data collected for use in articles should be current within the last three years. The reference list should contain all references cited in the text. The length of manuscripts should run between 18 and 28 typed pages.

MANUSCRIPT REVIEW

Manuscripts will be acknowledged as soon as possible upon receipt by the editor. All articles will be reviewed by all members of the editorial board. The journal maintains a blind review process.

The review process normally takes three to five months. Authors should be notified of the status of their article within that time period. Questions concerning submitted manuscripts should be directed to the editor.

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Community College Journal for Research and Planning
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THE MYTHS AND REALITIES OF PLANNING

G. Jerimiah Ryan

Plans are Nothing. Planning is everything.
Dwight D. Eisenhower

It is easy to plan. The real challenge involves dispelling negative attitudes and eliminating the ridgities which institutions tend to build into the planning process. Should all community colleges rush to develop institutional planning systems to help prepare for the future? Tom Peters, notes that most institutional planning is too cumbersome, too costly and too slow. Are Peter's criticisms applicable to planning programs at community colleges?

A common unwritten corollary exists which says that if you are a college administrator you also have, somewhere along the way, gained a facility for planning. In most community colleges, an administrator is given the title and responsibility for planning. Typically, the planner is very adept at producing massive printouts which contains volumes of data which can be used to develop charts, tables and graphs to show enrollment trends, programs offered, community economic impact and the list goes on. Everyone at a planning oriented community college is involved in something called "the process." Faculty and staff serve on committees and conduct in depth studies into the curriculum, budgeting and institutional operation which in turn is recorded in a series of reports with impressive sounding titles.

The above scenario contains the Three Cherished Myths of Planning. First, planning has to produce a long range plan. Second, planning has to be democratic and participative. Third, planning has to be integrated into the budgeting process.

The Long Range Planning Myth

We should all be concerned about the future because we will have to spend the rest of our lives there.
Charles F. Kettering

Today is the tomorrow we worried about yesterday.
Anonymous

Long range plans too often serve only as great bookends. To be totally effective, planning must be comprehensive, continuous , flexible and evolving. Because planning is so dynamic, it is difficult to explain real planning to those who want to see planning products as extensive reports attractively packaged and distributed to campus constituencies.

Planning does not predict the future; rather, it determines what we must do today to be ready for an uncertain tomorrow. Peter Drucker notes that plans do not deal with future decisions, but the futurity of present decisions.

Planning stengthens today's decisions by:

- identifying opportunities and threats
- recommending contingent strategies based on the college, its environment, resources and goals

Planning should be designed to:

- adapt to environmental changes, discontinuities, and unforseen impacts
- take advantage of opportunities created by change

- focus more on a limited time period but a larger range of alternatives
- accept that the process itself is susceptible to change

Planning implies change. Planning is resisted by some people not because they dislike planning but because they dislike change. This may explain why the easiest part of planning is describing the universe as it exists today. Involvement in the planning process gives the appearance of certainty and rationality. The emphasis is on the mechanics of the structure. With each level of the organization making a contribution to the overall plan without regard to operational and political realities no one is threatened and everyone is kept harmlessly busy. But no change occurs.

The real purpose of strategic planning is not to focus on a set of plans, but to develop an attitude, a way of perceiving, a set of intellectual skills to direct our future. A finished plan is a frozen thought.

The value is in the planning process for it requires stepping outside accepted thinking and seeing new ways. The result is change in attitudes, in expectations, in actions, and the creation of an environment that enables the organization to spot and solve its problems.

The Participation Myth

Even if you are on the right track, you'll get run over if you just sit there.
Will Rogers

If you want to make a good omelette, you have to crack a few eggs.
Felix Rohatyn

Any college conducting an analysis of the receptivity of planning by various campus constituencies will probably find a healthy amount of skepticism. The lack of support may be reported in three ways. First, few campus people have an understanding of planning concepts. Second, past planning has not produced short-term payoffs. Third, planning is associated with undesirable conditions (declining enrollment, limited resources, retrenchment).

Planning is inherently managerial. The administration has the global view, the internal data, the market data and the control of the money. The administration has to deal with all the external constituencies on a daily basis. The faculty and staff are already fully employed teaching and serving the students and planning is viewed by them as an additional responsibility to an already heavy schedule.

The administration should organize planning committees made up of faculty and staff to study "Big Issues." These groups should be comprised of people who are being rewarded, cultivated and coopted. They should be the best and the brightest on campus. There should be no adherence to racial, sex or discipline-oriented quotas. The groups should function totally outside the campus governance and campus administration systems and should report directly to the President.

The Link to Budget Myth

Planning theorists stress that planning will never be taken seriously unless it is linked intimately to institutuional budgets. Those administrators with budget responsibility should, in an ideal planning world, link their budget requests to previously formulated College plans and objectives. There are several reasons why this ideal planning world does not exist.

First, the best made plans are shredded very quickly when unanticipated increases in utilities, facilities repair, or personnel benefits occur. Second it is unfair to tie long term plans to a short term project. Third, over 90 percent of higher education budgets are not going to be "zero based" because 95 percent of the budgets are tied to personnel or utility costs, therefore, making zero based budgeting unrealistic. Finally, revenue estimates are only as good as the political perceptions of those responsible for dispensing the funds.

A traditional approach is to create planning-related encumbances for instruction and equipment purchases according to a systematic plan, and to make faculty allocation decisions based on enrollment statistics long before the budget process. The budget is related to planning, but should not be driven by it.

A comparison of mythical and realistic planning is outlined in Table 1. A realistic planning process is systematic flexible and can be adapted to a changing environment.

Table 1
Comparison of Mythical and Realistic Planning

	The Myth of Planning	The Reality of Planning
Premise	Institutional direction is a function of conventional wisdom of central administration, modified by campus participation	Institutional direction is a function of information from internal and external enviornment
Primary Purpose	Achieve optimal efficiency and effectiveness	Adapt to and cope with changing environment
	Participative	Centralized
	Static, Periodic	Dynamic, Continuous
Nature of Process	Rigid	Flexible
	Systematic	Systematic
	Science	Art
	Long Range (10 years or more)	Short and Mid-range (1-5 years)
Durability	Interest Wanes	Increasing interest and support

Adapted from Comprehensive Institutional Planning in Two Year Colleges by Steven Van Ausdale.

Conclusion

The future is here today, but we have to learn to see it
Harold Hodgkinson

An effective planning process should be governed by two characteristics: simplicity and usefulness. The procedure by which alternatives for decisions are identified must be very simple. Central to the planning process is data gathering and analysis, if the institution does not have a research and planning office certain individuals in the institution must be assigned the responsibility. Emphasis on participation, committees, forms, reports, and formal presentations to various constituencies should be kept to an absolute minimum.

The planning process, to be useful, must produce results in an expeditious manner and enable managers to identify options and make decisions without formal reports. The process cannot become so bogged down by tables of organization, time tables, flow charts, and paper trails that it becomes ineffective.

Realistic planning will produce outcomes that can readily be incorporated into the activities of the college. Action oriented planning strives to produce momentum for change instead of long range statements of conventional wisdom.

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A STUDY OF FORMER STUDENTS: DROPOUTS OR STOPOUTS?

Harriott Calhoun and Tammie Brown

Introduction

Attrition and retention have taken on increased importance to almost every sector of higher education as accountability and institutional effectiveness have emerged as major national issues. At the same time, higher education is attracting larger numbers of non-traditional students - adults, minorities, part-time students (Carnegie, 1980). Everett and Stirn (1979) suggested that these students do not make a one-time commitment to pursue higher education but must renew their decision over and over again as they balance the demands of job, family, and school.

Students in community colleges, in particular, have diverse characteristics and enroll in college for diverse reasons. Their goals may range from taking a single course to completing a degree. One might say that they are successful when they accomplish what they came to the institution to do. Further, many of these students accomplish their goals with a number of stops and starts along the way. Harold Hodgkinson said at the National Conference on Teaching Excellence in 1985 that we should stop thinking about "dropouts" and start thinking about "stopouts." According to Hodgkinson (1985, p. 36) "a lot of people should leave for a while and then should come back."

The following study focuses on a mid-size, suburban, two-year college. As is true in many two-year institutions, enrollment patterns show that a significant number of students do not maintain continuous enrollment throughout an academic year. If colleges such as this are to demonstrate institutional effectiveness, more must be known about these students and their reasons for interrupting their enrollment.

Purpose

This study of former students was undertaken by the Office of Institutional Research as the second in a cycle of student follow-up studies that includes surveys of withdrawing students, non-returning students, graduating students, alumni, and transfers. The purpose of the study was to obtain the following information about students who do not maintain continuous enrollment within an academic year.

(1) Purpose in enrolling and reasons for selecting this college;

(2) Reasons for non-continuous enrollment;

(3) Future plans for education;

(4) Level of satisfaction with programs and services;

(5) Suggestions for improving the educational experience of similar students.

Methodology

The population for this study was identified as students enrolled at the college in Fall or Winter Quarters, 1984-85, who did not re-enroll for Spring or Summer Quarters. From this population of 3,579 students, a computer generated random sample of 500 was selected.

The data were collected from July 11-September 12, 1985, by means of a structured, mailed questionnaire. The initial mailing, and the follow-up mailing fourteen days later to those who had not responded, consisted of a personalized cover letter signed by the Director of Institutional Research, the questionnaire, and a postage-paid return envelope. Completed questionnaires were returned by 137, or 27.4 percent, of the sample.

Although the representativeness of the sample can be assumed due to its size and the method of selection, attrition from the sample due to no-return of the questionnaire increases the concern about representativeness. Using the chi-square to test for representativeness, it was determined that the distribution of the respondents across those variables was found to differ from the expected distribution more than would be expected by chance alone. Characteristics associated with a higher than expected response rate were: G.P.A. of 2.00 or higher, attendance for 4 quarters or more, and accumulation of 45 or more credit hours. In generalizing from the findings of this study, one should keep in mind the under-representation of students who achieved a G.P.A. below 2.00, attended only one quarter, and earned fewer than 15 credit hours (Table 1).

Table 1
Comparison of the Respondents and the Sample
on Selected Characteristics

	Categories	Sample		Respondents	
		#	%	#	%
By Major Area of Study	Business	166	33.4	41	30.6
	Undecided	106	21.3	23	17.2
	Computer Sci	70	14.1	25	18.7
	Technologies	56	11.3	16	11.9
	Health	53	10.7	11	8.2
	Social Science	21	4.2	8	6.0
	HPR	6	1.2	2	1.5
	Liberal Arts	5	1.0	2	1.5
	Science	4	.8	2	1.5
	Education	4	.8	3	2.2
	Humanities	4	.8	0	0.0
	English	1	.2	0	0.0
	Math	1	.2	1	.7
	Total	497	100.0	134	100.0
	x^2=12.304, df=12, p > .05				
By Grade Point Average	0.0 - .99	120	24.0	18	13.2
	1.0 - 1.99	100	20.0	24	17.7
	2.0 - 2.99	138	27.6	42	30.9
	3.0 - 3.49	58	11.6	21	15.4
	3.5 - 4.00	84	16.8	31	22.8
	Total	500	100.0	136	100.0
	x^2= 12.112, df= 4, p < .05				
By Hours Earned	0 - 14	251	50.2	56	41.2
	15 - 29	77	15.4	18	13.2
	30 - 44	46	9.2	13	9.5
	45 - 59	34	6.8	16	11.8
	60 - up	92	18.4	33	24.3
	Total	500	100.0	136	100.0
	x^2= 10.111, df = 4, p < .05				
By Quarters Attended	1	134	26.8	22	16.2
	2	81	16.2	25	28.4
	3	45	9.0	11	8.1
	4 and up	240	48.0	78	57.3
	Total	500	100.0	136	100.0
	x^2= 8.731, df = 3, p < .05				

Students with particular characteristics may be less inclined to respond to a questionnaire even though their interest in education and their attitudes about this particular college may not differ significantly from those who do respond. However, in replication of this study, the methodology would be improved by using telephone interviews to increase the response from students with low G.P.A., credit hours under 15, and attendance of only one quarter.

Findings

Due to limitations of space, some of the findings are described below without accompanying tables.

Educational Purposes and Plans

For this group of students who were not continuously enrolled during the academic year being studied, the majority (61.5%) indicated that their purpose in enrolling at this college was to complete a program (28.2%, transfer degree; 32.6%, career degree, 0.7%, certificate). The remaining were interested in courses only (36.3%) or had no definite purpose in mind (2.2%). Further, two-thirds of the respondents (67.1%) had plans for returning to college. Half (51.1%) planned to enroll again or had already re-enrolled at this college, while 16.0 percent had planned to enroll or had already enrolled at another college. Almost one-third (32.9%) were either undecided (21.2%) or had no current plans (11.7%) for additional education.

College Choice

In the decision of which college to attend, this two-year college was the first choice of 69.7 percent of the respondents (Table 2). The second most frequent choice, given by 20.0 percent of the respondents, was a public four-year college or university. This was followed by 5.2 percent whose first preference was a private college or university. Only 3.0 percent (4 respondents) indicated vocational/technical, trade, or business school as their first choice.

Table 2
Respondents' First Choice of College to Attend
by Type of College

Response	Number	Percent
This College	94	69.7
Other Public 2-year college	1	.7
Public 4-year college or university	27	20.0
Private college or university	7	5.2
Vocational/technical, trade or business school	4	3.0
Not specified	2	1.5
	N=135	100.0

When respondents were asked to rate reasons for choosing to attend this college, reasons rated important by three-fourths or more were tuition costs (92.7%), academic reputation of the college (88.3%), personal atmosphere (78.8%), convenient location (78.1%), and open admissions policy (77.4%). As shown in Table 3, the reasons most frequently rated as "very important" were tuition costs (75.2%), convenient location (54.7%), and academic reputation of the college (47.4%).

Program Followed

Approximately one-third (34.1%) of the respondents reported that they did not follow a specific program while attending this college. The majority (61.5%) indicated that they followed a two-year program (career program, 34.8%; transfer/university parallel, 26.7%). A certificate program was followed by 2.2 percent and another 2.2 percent didn't know what type of program they followed.

Table 3
Rating of Reasons for Attending this College
by Degree of Importance

	Rating					
	Very Important		Somewhat Important		Not Important or Didn't Apply	
Reasons	#	%	#	%	#	%
Tuition costs	103	75.2	24	17.5	10	7.3
Convenient Location	75	54.7	32	23.4	30	21.9
Academic reputation of the college	65	47.4	56	40.9	16	11.7
Open admissions policy	51	37.2	55	40.2	31	22.6
Personal atmosphere	47	34.3	61	44.5	29	21.2
Reputation of a particular program	42	30.7	47	34.3	48	35.0
Size of the classes	39	28.5	51	37.2	47	34.3
Availability of financial aid	35	25.6	17	12.4	85	62.0
Size of the college	24	17.5	56	40.9	57	41.6
Attractiveness of campus	22	16.1	60	43.8	55	40.1
Advice of teacher, counselor, employer	18	13.1	27	19.7	92	67.2
Advice of parents	10	7.3	26	19.0	101	73.7
Advice of close friends	8	5.9	38	27.7	91	66.4
Other	7	5.1	1	.7	129	94.2

Work Status and Schedule Preference for Taking Classes

Almost 9 out of 10 respondents (88.3%) were employed while they were attending this college, and the majority (69.3%) were employed 30 or more hours per week. Another 10.9 percent worked 20 to 29 hours per week, while 8.1 percent worked fewer than 20 hours. Only 11.7 percent did not work while enrolled in classes.

The majority of respondents expressed preference for classes scheduled at times other than the traditional morning and afternoon. When responses to schedule preference were analyzed by number of hours worked during the week, evening classes on-campus were the most popular choice (65.3%) among those working 30 or more hours per week. Although some of these students preferred morning classes (20%), as many (21% and 20% respectively) desired classes, weekend on-campus and evening off-campus. The students working 30 or more hours per week preferred telecourses (10.5%) more frequently than those working 1 to 29 hours (3.8%). The preferences given most frequently by those working fewer than 30 hours were morning (61.5%) and evening on-campus (20%).

Evaluation of Academic Services and Other College Services

Quality of Academic Services. The "quality of courses for providing a general education" was the most highly rated academic service, with 81 percent of the respondents rating it as excellent (22.5%) or good (58.4%). Other services rated excellent or good by 70 percent or more were "quality of course instruction" (excellent, 26.3%; good, 52.6%) and "quality of printed information about academic programs" (excellent, 31.4%; good 40.2%). Table 4 shows that all listed academic services were rated excellent or good by the majority of the respondents except for the "opportunity to interact with faculty," which was rated excellent by 17.5 percent and good by 30.7 percent (combined, excellent and good equals 48.2%).

Of the eleven items rated, "availability of desired courses" was the only one to be rated poor by more than 10 percent of the respondents. Although 61.3 percent rated the availability as excellent or good, 12.4 percent rated it as poor. The highest "Don't Know/Doesn't Apply" ratings

were for quality of library collection (34.3%) and quality of courses in preparation for transfer (32.1%).

Quality of Other Services. Among the twenty-four other services provided by this college that respondents were asked to rate, "admissions" was rated satisfactory by the largest percentage (83.2%). Nine other services were also satisfactory to the majority of the respondents: campus security (76.6%), registration (75.9%), bookstore (71.5%), business office (70.1%), library (67.9%), parking (67.9%), orientation (52.6%) counseling services (51.8%), and placement testing (51.8%).

Table 4
Rating of Academic Services and Courses

Academic Services and Courses	Rating				
	Excel-lent	Good	Fair	Poor	Don't Know/ Doesn't Apply
	%	%	%	%	%
Quality of academic advising	16.1	43.1	15.3	8.0	17.5
Quality of courses for providing a general education	22.6	58.4	7.3	1.5	10.2
Quality of courses in preparing you for employment	19.7	45.3	10.9	3.7	20.4
Quality of courses in preparing you for transfer to another college or university	17.5	36.5	11.7	2.2	32.1
Quality of course instruction	26.3	52.6	13.9	4.4	2.9
Availability of required courses	17.5	48.9	19.0	9.5	5.1
Availability of desired courses	17.5	43.8	20.4	12.4	5.8
Opportunities for interaction with faculty	17.5	30.7	27.0	5.8	19.0
Quality of library collection	16.8	35.8	11.7	1.5	34.3
Quality of printed information about academic programs (catalog, brochures, etc.)	31.4	40.2	17.5	0.7	10.2
Effectiveness of advertising, recruiting presentations, etc. in accurately representing the programs and services of the college	16.1	42.3	18.2	2.2	21.2
N = 137					

Four services were rated as unsatisfactory by more than 10 percent of the respondents: parking (21.2%), registration (16.8%), bookstore (16.8%), and counseling (11.7%). "No Opinion/Don't Know" was the response of the majority for a number of college services ranging from services provided for students with particular characteristics (such as services for veterans and the handicapped) to services available to all students (such as cultural programs, career planning, and health services).

Overall Educational Experience and Willingness to Recommend this College

A large majority, 87.5 percent, rated their overall educational experience at this college as excellent (32.8%) or good (54.7%). For 11.0 percent, the experience was fair; for 1.5 percent (2 people), the experience was poor.

Approximately 9 out of 10 respondents (89.8%) said that they definitely or probably would recommend to others that they attend this college. Of the remaining 10.2 percent, 12 people (8.8%) were uncertain as to whether they would recommend the college, two (1.4%) probably would not, and none definitely would not.

Accomplishment of Purpose

For these students who were not continuously enrolled during the academic year 1984-85, 17 percent reported that their purpose in attending this college had been completely accomplished. It was partly accomplished for 36.3 percent and not accomplished for 38.4 percent. Another 8.2 percent were undecided.

Reasons for Non-Continuous Enrollment

Only one reason was rated by the majority as being important in their decision not to register every quarter. Conflict between job and school was rated as very or somewhat important by 53.3 percent. Other reasons considered important by one-fourth or more of the respondents were "not enough time to study," 40.9 percent; "needed a break from college," 39.4 percent; "achieved my educational goals," 31.4 percent; "could not afford to continue," 26.3 percent; and "unsure of my academic goals," 26.3 percent (Table 5).

Some reasons are notable because of the few respondents who considered them important in their decision not to maintain continuous enrollment. Rated important by the fewest respondents were "not interested in college," 6.6 percent; "major I want not available," 5.8 percent; and "moved out of the area," 5.1 percent.

Table 5
Reasons for Not Registering Each Quarter
at the College

	Rating			
	Very or Somewhat Important		Not Important or Didn't Apply	
Reasons	#	%	#	%
Academic Reasons				
Not enough time to study	56	40.9	81	59.1
Needed a break from college	54	39.4	83	60.6
Achieved my educational goals	43	31.4	94	68.6
Unsure of my academic goals	36	26.3	101	73.7
Could not register for the classes I wanted	31	22.6	106	77.4
Dissatisfied with my grades	30	21.9	107	78.1
Dissatisfied with class schedule (times, days, etc.)	25	18.2	112	81.8
Unsure of my ability to do well in college	25	18.3	112	81.7
Dissatisfied with the quality of teaching	24	17.5	113	82.5
Completed courses required by college to which I plan to transfer	24	17.5	113	82.5
Dissatisfied with my classes	23	16.8	114	83.2
Dissatisfied with the quality of academic advising	23	16.8	114	83.2
Decided to go to other college	20	14.6	117	85.4
Classes I registered for were deleted	12	8.8	125	91.2
Decided I wasn't interested in college	9	6.6	128	93.4
Found that the major I want is not available	8	5.8	129	94.2

(continued on next page)

Table 5 (continued)
Reasons for Not Registering Each Quarter
at the College

Reasons	Rating: Very or Somewhat Important #	Very or Somewhat Important %	Not Important or Didn't Apply #	Not Important or Didn't Apply %
Other Reasons				
Conflict between job and school	73	53.3	64	46.7
Could not afford to continue	36	26.3	101	73.7
Had health or family problems	21	15.3	116	84.7
Had child care problems	16	11.7	121	88.3
Had transportation problems	11	8.0	126	92.0
Moved out of the area	7	5.1	130	94.9
Other reason (s) (as specified)	4	2.9	133	97.1
1 felt distance to the college was too far to travel				
1 decided to attend a vocational school				
2 had conflicts with outside activities				

Listed below are the responses to those reasons that pertain to scheduling, course offerings, instruction, advising, and counseling. Although one-fourth or fewer of the respondents rated any of these as important in their decision not to register each quarter, they are the reasons over which the College can have the most influence.

Scheduling, Course Offerings, and Instruction	Important in Decision Not to Register Next Quarter Percent
Could not register for classes I wanted	22.6
Dissatisfied with class schedule (times, days, etc.)	18.2
Dissatisfied with the quality of teaching	17.5
Dissatisfied with my classes	16.8
Classes I registered for were deleted	8.8
Counseling and Advising	
Unsure of my academic goals	26.3
Dissatisfied with my grades	21.9
Unsure of my ability to do well in college	18.3
Dissatisfied with quality of academic advising	16.8

Discussion of Decision Not to Maintain Continuous Enrollment

Table 6 shows that most of the respondents did not talk to someone at the college (counselor, instructor, etc.) before deciding not to attend a particular quarter (11.2%, did; 88.8% did not). Only one-third (33.3%) of those who did talk to someone reported that they thought the discussion was helpful. Of those who did not talk to someone, 13.5 percent thought discussion would have been helpful, 54.6 percent thought it would not have been, and 31.9 percent didn't know.

Table 6
Discussion of Decision Not to
Attend a Particular Quarter

	Talking with someone before deciding not to return :							
	was/ would be helpful	%	wasn't/ would not be helpful	%	don't know	%	Total	%
Talked to someone	5 (33.3%)	23.8	9 (60.0%)	12.2	1 (6.7%)	2.6	15 (100.0%)	11.2
Did not talk to someone	16 (13.5%)	76.2	65 (54.6%)	87.8	38 (31.9%)	97.4	119 (100.0%)	88.8
Total	21 (15.7%)	100.0	74 (55.2%)	100.0	39 (29.1%)	100.0	134 (100.0%)	100.0

Suggestions for the College to Improve the Educational Experience of Students

Preliminary analysis of responses to the question "What can this college do to improve the educational experience of students like you?" led to the identification of eleven categories into which responses could be classified. Table 7 shows the number of students making comments or suggestions in each category. The most frequent suggestions were in the categories of "Course Availability," "Instruction/Instructors," and "Advising/Counseling." "Misc." includes comments, many of which are complimentary, rather than suggestions for improvement.

Table 7
Tally of Responses to "What can this college do to improve the educational experience of students like you?" by Category of Response

Category	Number of Students
Course Offerings :	
Frequency, Variety, etc.	9
Course Availability :	
Night, Off-Campus, Weekend, etc.	17
Advising/Counseling	12
Instruction/Instructors	16
Tutoring and Lab	3
Financial Aid	4
Registration	6
Bookstore	3
Job Placement	3
Change of Mission	3
Misc.	22

Summary of Findings

1. The majority of respondents (61.5%) indicated that their purpose in enrolling at the college was to complete a degree.

2. Even though they had not maintained continuous enrollment during the academic year, over half planned to enroll again or had already enrolled in college (51.1% at this college and 16.0% at other colleges).

3. Almost 9 out of 10 respondents were employed while attending the college, with the majority working 30 or more hours per week.

4. Evening was the preferred time for taking classes for 73.7 percent.

5. This college was the first choice for 69.6 percent when they decided to attend college.

6. Reasons given by three-fourths or more for choosing this college were these:
   a. Tuition costs
   b. Academic reputation of the college
   c. Personal atmosphere
   d. Convenient location
   e. Open admissions policy

7. Reasons most frequently rated as "very important" were tuition, location, and academic reputation of the college.

8. Academic services receiving the highest ratings were "quality of courses for providing a general education" and "quality of instruction."

9. "Availability of desired courses" was the only academic service to be rated as poor by more than 10 percent of the respondents.

10. A total of 88 percent rated their overall educational experience at this college as excellent or good.

11. Approximately 9 out of 10 respondents (89.8%) would recommend this college to others.

12. Conflict between job and school was the most frequent reason given as important in the decision not to register each quarter; lack of interest in college was the least frequent.

13. Most did not talk to a counselor or instructor before deciding not to attend a particular quarter, and only one-third of those who did talk to someone thought the discussion was helpful.

14. Suggestions for improving the educational experience for students at this college were directed most frequently toward the following :

    a. Course availability (expanding offerings at night and off-campus),
    b. Instruction/instructors, and
    c. Advising/counseling (meeting the needs of non-traditional students).

Conclusions and Recommendations

When students drop out of college at the end of a particular term, the assumption may be that, because of lack of interest or effort, they will not return for additional study at any time. This does not seem to be the case for the students studied in this research.

"Conflict between job and school" and "not enough time to study" were the most frequent reasons given for interrupting college enrollment; even so, the majority had planned to enroll again or had already enrolled in order to continue their education. Less than one-third were either undecided or had no current plans for additional education. These findings indicate that the majority had "stopped out" rather than "dropped out" of higher education.

"Yes, completely" was the response of 17 percent to the question concerning the accomplishment of their purpose for enrolling at this two-year college. This response is consistent with 18 percent who rated "achieved my educational goals" as being very important in their decision not to register every quarter. When measuring retention and attrition, these students should be considered "completers" rather than "dropouts" because they accomplished the purpose for which they enrolled.

Current efforts of the college seem appropriate in light of the findings of this research. The expansion of offerings at night on-campus and at various off-campus locations, as well as the added flexibility provided by telecourses and Saturday classes, enables adults with job and family responsibilities to continue their education when they otherwise might not be able to do so. Care should be taken in sequencing the offerings at these non-traditional times to ensure that students can continue to make progress toward a degree, if that is their goal.

Recent attention at this college has been focused on improving advising for students. The Advising Center includes Placement and Testing, Career Lab, Job Placement, Advising for Undecided Majors, Transfer Advising, Prescribed Adult Continuing Education (PACE) and Senior Adult Scholarship Program (SASP) Advising, and the Telecourse Center. Continued emphasis should be placed on enhancing these services and on communicating their availability to students. Retention efforts should be directed toward the special needs of students who are unsure of their academic goals or of their ability to do well in college. The Advising Center might be used to help students clarify their goals and increase their confidence.

Replication of this study with other groups of students who interrupt their enrollment will increase our understanding of dropouts and stopouts. Also, longitudinal studies are needed that compare student goals with attendance patterns.

More information is needed about student goal attainment. Students may have more than one reason for attending college and their long term goals may change over time as a result of their educational experience and/or changing job and family circumstances. Short term attrition for community colleges is high, but only through monitoring of student progress, both within and outside the college, will true retention be measured.

References

Carnegie Council on Policy Studies in Higher Education. (1980). Three thousand futures : The next twenty years in higher education. San Francisco: Jossey Bass.

Everett, C.L., & Stirn, J. (1979, April). Academic and social integration of students : Why do they stay or leave? Paper presented at the annual meeting of The Association for the Study of Higher Education, Washington, D.C.

Hodgkinson, H.L. (1985). Teaching tomorrow's students. In Celebrating Teaching Excellence, Proceedings of the 1985 National Conference on Teaching Excellence, National Institute for Staff and Organizational Development (pp.29-42). The University of Texas at Austin.

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PREDICTING TRAINING SUCCESS IN A CUSTOMIZED INDUSTRY PROJECT

Jerry Moorman and P. Anthony Zeiss

The tremendous surge in requests for community colleges' and technical institutes' involvement in customized industry-specific training programs, presents the dilemma of choosing potentially successful trainees from among the many applicants. Various commercial instruments currently exist to assist in the process. Questions arise, however, concerning the validity of such instruments and their applicability to real world industry needs.

This study deals with one community college's selection and subsequent evaluation of a commercially available assessment instrument. The results are presented for your information and use.

Background for the Study

The question of choosing an effective assessment instrument became an issue with Pueblo Community College in Pueblo, Colorado, when it was asked to deliver a customized microscopic soldering course for potential employees at a new defense electronics plant starting up in the area. A fact complicating the issue was that over 8,000 resumes had been received for the upcoming jobs. The local Job Training Partnership Act agency was the repository for the resumes and had requested assistance from the community college in choosing the best applicants.

It had become increasingly clear that Pueblo Community College had to develop a more sophisticated assessment program than was currently in use. At that time, the College was using a fairly standard version of paper and pencil testing for basic skills, but very little career or technical skills assessment was taking place. The demand for work force-specific assessment had increased dramatically with the newly located industry in the area. Assesment had to be much broader than a traditional testing system and it had to examine all three domains of learning; cognitive, affective, and psychomotor.

For years, the cognitive domain had received the most attention, probably because it was the easiest to measure. The affective domain had received some attention, but it was difficult to measure. The psychomotor domain had been pretty much ignored, except in the case of disabled persons, because of its difficulty of measurement.

Pueblo Community College decided that if an assessment program were to be useful, it would have to include all domains of learning. With that in mind, the College staff began the search for an economically viable system around which a comprehensive assessment center could be developed. After much research and consideration of several systems, Pueblo Community College selected the Microcomputer Evaluation and Screening Assessment (MESA) System by Valpar International Corporation. It provided all the basic ingredients.

First of all, it provided usable information concerning all three domains of learning. Secondly, it used a microcomputer to compare the individual results to 12,000 plus job requirements in the Dictionary of Occupational Titles. Thirdly, it provided the capability to create individual company-specific profiles for comparison to individual results. And fourthly, it provided a computer print-out of results for use in the placement process. It was believed that the criterion-referenced testing approach offered by the MESA system would provide particular validity to this assessment activity. With this approach, all standards are based upon actual job requirements. When a person is assessed, his/her performance is compared to the actual performance required on the job as opposed to comparison with others taking the test as is the case with norm referenced assessment.

With the new assessment system in place, the college tackled the problem of the 8,000 resumes waiting for jobs at the new defense plant. With a great deal of help form the local J. T. P. A. Agency, a system for processing the resumes was developed and the task begun. During the

first year of operation, approximately 200 individuals were selected for training and potential employment. The basis for their selection was the MESA System.

According to all available data, the system seemed to be doing an exemplary job. The rate of drop-out from training was almost zero. During the plant's first year of operation, it experienced lower employee turnover in the Pueblo plant than any other of its sister facilities in the country. Pueblo Community College was not satisfied with that evidence, however; it wanted more. As a result, the following research project was conducted. The results are presented for your information and use.

The Research Problem

The major thrust of the research was to determine if the Valpar MESA System was a reliable predictor of success for manufacturing plant training programs; specifically for the defense related electronic assembly customized training program. Also of importance, was the relative importance of each of 16 subsets contained in MESA as predictors of training success.

Research Methodology

The following methodology was used in conducting the study. First, the 16 subsets (independent variables) were identified as follows:

1. Data -- the ability to use information, ideas, symbols and concepts.
2. People -- the ability to interact with people.
3. Things -- the ability to use and understand tools, materials, and other objects.
4. GED Reasoning Development
5. GED Math Development
6. GED Language Development
7. Intelligence -- general learning ability required.
8. Verbal -- the ability to use and understand language.
9. Spatial -- the ability to think visually about geometric forms and to use diagrams.
10. Form Perception -- the ability to perceive detail in objects and make visual comparisons.
11. Clerical Perception -- the ability to quickly and accurately perceive words and numbers.
12. Motor Coordination -- the ability to make coordinated movements quickly and accurately.
13. Finger Dexterity -- the ability to manipulate small objects rapidly and accurately.
14. Manual Dexterity -- the ability to move hands easily and skillfully.
15. Eye-Hand-Foot Coordination -- the ability to use hands and feet together in a skillful manner.
16. Color Discrimination -- the ability to match or discriminate between colors by sight or from memory.

The second step involved the gathering of final training scores (dependent variable) for 214 trainees selected by the MESA. These scores represented the final averages based on numerous tests administered over a two-week period of training.

The third step involved statistical treatment of the data using step-wise multiple regression. The purpose of this procedure was to determine in descending order the independent variables that had the greatest effect on the variance of the dependent variable.

Findings

After analyzing the results of the step-wise multiple regression procedure, it was evident that ten of the sixteen independent variables were significant in the equation formula at the .05 level. (Table 1). These ten independent variables as they appeared in descending order were GED Reasoning, Spatial, Motor Coordination, Manual Dexterity, Eye-Hand-Foot Coordination, Finger Dexterity, GED Language, Intelligence, GED Math and Data.

Table 1

Step-Wise Multiple Regression Procedure

To Determine Relationships Between

Sperry Training Courses and Valpar's Mesa Categories

SUMMARY TABLE

Variable	Multiple R	R Square	Significant F
GED Reasoning	.46108	.21259	.0024*
Spatial	.49929	.24929	.0043*
Motor Coordination	.51981	.27020	.0081*
Manual Dexterity	.56581	.32014	.0065*
Eye-Hand-Foot Coordination	.59888	.35866	.0064*
Finger Dexterity	.61165	.37411	.0100*
GED Language	.62815	.39457	.0132*
Intelligence	.63887	.40179	.0221*
GED Math	.63833	.40747	.0360*
Data	.64875	.42087	.0485*
Things	.65503	.42907	.0691
Clerical Perception	.65788	.43281	.1019
Verbal	.65905	.43434	.1483
People	.66700	.44488	.1844
Color Discrimination	.66760	.44570	.2511
Form Perception	.66821	.44650	.3280

*Significant in the equation formula at the .05 level.

The first variable to enter the equation formula, GED Reasoning, had a positive correlation of .46* and explained 21* percent of the variance in the dependent variable. When the second variable, Spatial, entered the formula, the positive correlation increased to .50 and the variance explained increased to 25 percent. As Motor Coordination entered the formula, the positive correlation rose to .52 and the variance explained to 27 percent. Manual Dexterity was the next variable in the formula. It increased the positive correlation to .57 and the variance explained to 32 percent. The positive correlation rose again to .60 when Eye-Hand-Foot Coordination was entered. Variance explained also rose to .36 percent. The rising trend continued with the addition of Finger Dexterity. The positive correlation was .61 and variance explained was 37 percent. GED Language was the seventh independent variable to enter the

* The correlations and percent variance figures were all rounded for the sake of simplicity.

equation formula. Its entry accounted for an increased positive correlation of .63 accompanied by 39 percent of variance explained. Intelligence entered next with a positive correlation of .63 and the variance explained increased to 40 percent. When GED Math was entered, the positive correlation increased to .64 and the variance explained increased to 41 percent. Data was the last significant variable to enter the equation formula. It caused the positive correlation to increase to .65 and the explained variance to 42 percent.

When considered in cumulative fashion, the statistics reveal that the ten variables listed had a positive correlation of .65. Based on this data, 42 percent of the variance in the dependent variable is predictable when using these independent variables.

Conclusions

After combining the findings of the step-wise multiple regression procedure with the aforementioned facts concerning training class attrition and the plant's employee turnover rate, the conclusion was reached that the MESA is a good system for use in pre-employment and/or pertaining assessment and screening for manufacturing plants.

The strength of the system no doubt lies in its criterion referenced approach to assessment and this approach gave the system good validity for customized training purposes.

Summary

When Pueblo Community College first looked at the MESA System, all validity and reliability data were reviewed. Not being completely satisfied with that, the college decided to validate the system locally. The results of the validation have been presented for your consideration. Pueblo Community College was satisfied with the results and intends to continue use of the system. Continued validation of this system will occur on a periodic basis in the future, however.

Local validation of an assessment system such as this should be considered by any college or technical institute using it for customized training purposes. If the system is worthwhile, it will survive the scrutiny.

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TOWARDS A NEW PERSPECTIVE ON COMMUNITY COLLEGE INVOLVEMENT IN ECONOMIC DEVELOPMENT

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It is arguable that the community colleges have been involved in economic development activities from the time the doors opened. Certainly the two year technical college and technical and occupational divisions of our junior and community colleges have long had as their missions to provide a skilled labor force for employment in areas of local, state, and regional need. Recent years have been a departure from the original concept of educational programs and activities designed around skilled crafts trades and the quasi-apprenticeship programs of the post-World War II era. However, today community colleges are directly involved in many diverse programs designed to foster economic development including: centers for small business assistance and incubation; which serve as resources for local and regional planning and research, and information dissemination; centers which offer office automation assistance; and produce customized training and retraining programs for business and industry; performance-based job contracting; and developing partnership programs with universities and the private sector to provide advanced manufacturing technological assistance. The programs are as diverse as are the local needs.

What economic and demographic forces and trends are pushing community colleges into a more pro-active, direct role in economic development? Can we predict the likely impact of such forces and trends well into the future? Understanding several of the more prominent forces and trends influencing economic and demographic change will shed light upon the motivations of public and private sector decision makers in turning to community colleges for leadership in economic development activities. Presented here is the proposition that significant changes in the economy are juxtaposed upon perhaps even greater changes in demography, with the cumulative effects of the whole being greater than the sum of the parts.

Demographic Trends

Great changes have appeared in America demographically during the post-Vietnam era. The population is rapidly aging, the baby-boomers are now having families, and the young adult population has a much larger presence of minorities, particularly Hispanics. The higher fertility rates of America's minority populations portend a future acceleration of current trends. The two wage-earner family and the high rates of single-parent heads of households participating in government income-support programs are now established facts of American life. Several recent studies have indicated a significant increase in the number of families at or below the poverty line since 1980. While a more indepth survey of current demographic trends is beyond the scope of this work, several key trends should be considered.

1. America is Aging. In 1980 there were four times the number of Americans reported by the Bureau of the Census as being over 80 as there were just a decade before. The trend is expected to accelerate significantly impacting the social security/income maintenance and medical delivery systems, as the post WWII baby boomers who came of age in the 1960's retire in the early years of the next century. Conversely, at the turn of this century in 1900, it was estimated that about 10 workers supported one retiree, in the early 1980's the ratio was about 5 or 6 to 1, and in the year 2005 it is estimated that the ratio will be under 3 to 1.

2. America's minority populations are rapidly growing.
One of those three workers mentioned above will be a member of a minority group, with a 50-50 chance that the person will be Black or Hispanic. It has been conservatively estimated by demographers that by the year 2025, America's Hispanic population will be larger than the Black population. Other demographers have estimated that the Hispanic-Americans will outnumber Blacks by the year 2005, some even before. The relatively higher fertility rates among America's minority populations as compared to the majority

white population, and the massive immigration of Hispanics to the United States mainland indicate a much larger presence of minorities within the adult work force.

3. Single-parents on welfare and two wage-earner families are now commonplace. An estimated four million American families headed mostly by single parents received income support from federal programs in 1987. The two wage-earner family has produced the recent phenomenon of late parenting, by working mothers who wait until their early or mid 30's to bear children, choosing to pursue both family and career.

4. About 85 percent of those who will be in the work force in the year 2001 are already adults, and most are already at work because of the baby boom. As Dr. Pat Choate, Director of TRW Corporation's Office of Policy Analysis has noted, America "faces a reality for the next two decades that we are going to make it or break it with the people who are already at work. That has very real implications for education. The people who are going to be changing occupations three times and jobs six to seven times are the only workers we are going to have. To face this great change, they must be retrained, reeducated,and retooled. Who's going to do that? That is the challenge for education and business. (Business and Higher Education, 1986).

Some Implications of the Changes in Demography for Community Colleges

There are many, many possible implications for community college faculty and staff that follow from the brief presentation of demographic trends presented here. Child care, counseling, individualized learning programs for students possessing diverse learning backgrounds, student work, student outcomes and assessment, financial aid for part-time students, bilingual educational programs, services to improve the quality of life for seniors and increased knowledge of the growing Hispanic population are just some of the more obvious and important implications. Some of the more prominent demographic implications include:

1. Child Care. These services will become increasingly more essential if working women are to have full access to postsecondary education. Between 1970 and 1982 the number of women aged 25 to 29 enrolled in college rose 249 percent, while the number of women aged 30 to 34 increased by 314 percent, according to Helen Blank, director of child care for the Children's Defense Fund (Greene, 1985). Currently no programs exist within the federal Higher Education Act to directly support child care. Only 1,800 of America's six million employers provide on site child care, or employee benefits to finance such care. ("Business and Higher Education, 1986). Providing child care, especially in the evening, will be critical if women and working parents are to fully participate in adult basic education, G.E.D., bilingual education, and developmental studies programs.

2. An operationally broader definition of student services at community colleges. Student services will take on a role of increased importance at community, junior,and technical colleges. New student populations whose families possess little knowledge of the altogether too complex student financial aid, admissions, and transfer processes desperately need and deserve expanded counseling services. Programs that train community college student service professionals--traditionally graduate academic programs in higher education--will need to incorporate a broader operational role of student services in the curriculum, with a strong practice -based orientation.

3. Peer review of student services. Over and above the traditional accreditation process, student service professionals at two year colleges would likely benefit from professionalized peer review by their colleagues to improve and extend the quality of services.

4. Understanding the diverse Hispanic student population. Until 1980 there was great controversy regarding an actual definition of what constituted "Hispanic origin" from the Bureau of Census. Now it is clear that America's fastest growing ethnic group has great diversity among and between the three largest subgroups (Mexicans, Cubans,and Puerto Ricans) that together comprise the vast majority of the Hispanic-American population. Faculty and staff can better serve these new students if sensitized to the social, economic, political and cultural context of the Hispanic experience in American life. Particularly

important if racial and ethnic stereotypes are to be avoided, is the respect for and nurturing of the strong work ethic held by Latinos.

5. Enhanced opportunities for student work. The complexity of the student aid forms has been shown to pose a barrier to students from families possessing deficiencies in the writing and speaking of English. Nearly three-quarters of Hispanics enrolled in U.S. higher education are found in community colleges. Given the abysmally low rates of transfer for minorities and the proven effectiveness of student work as a retention technique, community colleges should work with the private sector to promote student assistance as a vehicle of college finance and overall worker productivity.

6. Community colleges should retain their historic commitment to low tuition. Guaranteed tuition plans will not likely provide the needed assistance to students from poorer families desirous of the better future a college education brings. Low tuition is still the most effective form of student aid ever desired. Low tuition is color-blind and universally understood as the clear commitment on the part of the state towards access to postsecondary opportunities, and cost little or nothing to administer.

Motivation for Community College Involvement in Economic Development

In recent years the term "economic development" has become as much of a buzzword in higher education circles as the terms "outcomes assessment" and "critical thinking skills." Whether the term is relegated to the scrap heap of educational jargon or not (remember zero-based budgeting and management-by-objectives?), the concept of more direct involvement of administrations and faculty of institutions of higher education in economic development has important philosophical and practical implications, particularly for community colleges. Understanding the motivation on the part of policy makers in the public and private sectors for this increased involvement will assist community college faculty and staff in defining their role(s), and enhancing appreciation of the philosophical and practical problems raised by a more direct involvement in economic development activities.

A more direct role for community colleges was clearly envisioned by Congressman Terry L. Bruce (D-Illinois). Key sections of Bruce's 1985 legislation, the National Higher Education and Economic Development Act, were written into the reauthorized Higher Education Act of 1986 under the new Title XI " Partnerships for Economic Development and Urban Community Service." While no monies were appropriated in 1986 due in large measure to the Gramm-Rudman-Hollings Emergency Deficit Reduction Act, the Congressional findings and purpose make clear the kind of expanded role federal policy leaders see for institutions of higher education. Federal policy makers see a much more active role for institutions of higher education in economic development. This enthusiasm extends to state and local officials as well. In fact few college presidents today are chosen without making at least some reference to the promotion of area and regional economic development.

Case Studies of Institutional Effectiveness

This part of the study will explore three different models of community college involvement in economic development activities. In reality, there are a great many more models of successful community college involvement in economic development; however space does not permit a discussion of all the many excellent programs now in existence (The program at Pueblo was reviewed in the last issue of the journal). Clearly the efforts are as varied as are the needs of the regions the 3,300 institutions serve. The diversity is thereby the definition given the community-based mission of these institutions. The information describing the models presented was obtained from three sources--(1) presentations by officials of the institutions at regional and national meetings, (2) technical reports, brochures, institutional audits, and (3) personal interviews and other information supplied by the college. The models discussed here were chosen because together they reflect diversity of efforts, and in no way should it be concluded that these are the only general models of community college effectiveness in economic development.

The Institute for Business and Industry
Lake Michigan College

The case of Lake Michigan College represents what a rural-based community college can do to provide important, critically needed programs and services to positively affect the economic development of its service region. Well into the mid-1980s, the Benton Harbor region, located in the tip of southwest Michigan, was suffering from the lingering effects of the deep recession of 1980-82. In the summer of 1984 unemployment was still in double digits, while the College's full-time enrollment had declined by 20 percent between 1981 and 1983, and part-time enrollment remained static. In short, the service area of this rural area of 150,000 people was in a state of economic disruption, as the two major sectorial sources of income--heavy industrial manufacturing and agriculture--were in decline if not collapse.

Like many rural areas around the country, poor market conditions produced in part by large trade imbalances and budget deficits had created a depressed agricultural sector. The Berrien County area has a very long growing season, and traditionally the area's productivity has been second only to California (27 fruits and vegetables are regularly grown locally). Additionally, the heavy industrial manufacturing sector was in decline. Primarily a provider of support machinery and parts for the auto industry, the area was wracked by the shocks and after shocks of the closings of three major plants owned by Clark Equipment Company, Whirlpool Corporation, and Sheller Globe Corporation that together employed about 3,000 workers. These high-paying union jobs traditionally paid in excess of $12.00 per hour, thus the closing of these plants between 1980 and 1982 had a dramatically negative ripple effect on the rest of the region's economy.

By June of 1987, however, this situation had dramatically improved. Unemployment was down to 7.2 percent, a rate higher than local leaders preferred, but far better than the double digit rates of 1984 and 1985. Closings of heavy industrial manufacturing plants had stopped, and the downtown of the City of Benton Harbor, population of 16,000, which had been likened to that of a ghost town just a few years before, was showing signs of new life. While it is clear that external forces played an important role in turning the situation around, what the local community did for itself to stabilize the industrial base and diversify its small business sector is a model for other areas of the nation.

The Institute for Business and Industry (IBI) at Lake Michigan College played a vital leadership role in local economic development efforts, demonstrating what a community college can do to support industrial retention and small business development. The Institute was created in October 1984 to provide customized training to business and industry on a scale unknown to rural southwest Michigan. The Institute, as a separate department of the College, was charged with the responsibility to bring a central focus to institutional efforts to help business function in a more productive manner. The initial genesis of IBI was to provide customized training in statistical process control to the 30 small and middle-sized die-cast plants in the Berrin County area. Customized training programs in group decision-making and related management techniques were soon added, as was the servicing of training needs of public sector organizations.

The program was an immediate success, as figures show. By March 1986, after just 14 months of operation, IBI had provided customized training to over 3,500 managers, supervisors, and operators. By June 1987, a total of 4,500 individuals in the private and public sectors had been served. By June 30, 1987, the end of the institutional fiscal year, IBI customized training programs had generated revenues of about $1,100,000. Expenses were about $480,000, divided between administration (including rent, phone, and salaries--$100,000), indirect costs paid to the college ($150,000), and the cost of the adjunct trainers; salaries and travel ($230,000). Of the nearly $1,100,000 in generated revenue, $950,000 or 90 percent was derived from private industry sources, and the remaining 10 percent from public grant sources including JTPA, U.S. Departments of Labor, Commerce, and Education, and the state of Michigan's Business and Industrial Training Program. Thus, over half of a million dollars was turned over to the general revenue fund of the institution as a return on Lake Michigan College's investment into IBI, with $177,000 more to follow two years later in delayed funding formula adjustments from the Michigan Community College Board for credits generated through IBI programs for which continuing education credits were earned.

Currently, IBI provides the following programs and services:

(1) customized training programs geared to specific business and industry needs, including the development of company-specific generic modules, individualized curricula, and heavy use of videotaping.

(2) the delivery of on and off campus training for managers, supervisors, and operators.

(3) consultive assistance for private and public sector agencies and organizations.

(4) special needs projects for companies and governmental agencies.

(5) grant writing assistance, including the acquisition of funds for client training.

(6) staff training/professional development training for other educational institutions and school systems.

(7) small business assistance, including assistance in the development of marketing plans and loan packages.

The development of a customized training program begins with an in depth assessment of needs. On-site task analyses, various survey instruments, management/supervisory questionaires, and assessment testing are all part of the effort. Upon determining training needs, specific strategies to accomplish the training are undertaken. The center director noted that many times businesses do not know what their needs are, because they have not addressed this key issue. Generic training modules customized to the specialized needs of the firm are then developed in such a way that, with slight modifications, they can be used by the firm itself to develop further training/updating programs. And because the models introduced are in most cases computerized, continuing education credits for many of the training courses became possible. Customer satisfaction was enhanced by the inclusion of the management and work force in the needs assessment process. An extensive collection of pre-packaged seminars and workshops have been developed over time covering broad topic areas such as Communications, Motivation and Influence, General Management, Marketing, Sales, Computer Usage and many others. Specific program choices under the broad topic of Communication includes such topic areas as: What is Communications, Assertive Communications, Listening, and The Trust Climate. Basically, 3 of the 5 members of the IBI full-time staff perform curriculum/training program writing, one handles fiscal operations and management, and the fifth person manages the office.

At a most provocative session of the 1986 Annual Convention of the American Association of Community and Junior Colleges, Mr. William J. Baker, the first Director of IBI, presented compelling data supporting his belief that community colleges have a critically important role to play in providing training programs and services to business and industry. According to estimates of the National Association of Vocational Educational Trainers (NAVET), in 1984 the private sector spent about $200 billion on employee training, of which a third, or $67 billion was obtained outside the firm. In 1985 NAVET estimates the private sector would spend about $600 billion annually, going outside the firm to obtain about $220 billion worth of training programs and services. Thus, the need for private sector industries to seek training services in our increasingly specialized, technologically-oriented society is growing, and the trend of private businesses going outside of the firm to obtain such training is likely to grow. This provides a tremendous opportunity for two year colleges to provide quality training for those who need it.

Unquestionably, IBI has had a dramatic impact on the institution, internally and externally. Externally, IBI generated more positive publicity for Lake Michigan College "than all other programs put together," said one college official. In addition to building excellent relations with the local business community, good relations with the agricultural sector have been developed as IBI tailored training development programs to improve local farm management practices. Collegial relations with the Michigan State Departments of Commerce and Labor, and the State Board of Education have developed, as a rather unusual relationship with Job Partnership Training Act (JTPA) officials. Training programs under JTPA in the

Berrien County area primarily are devoted to on-the-job training, thus IBI's customized training programs in a sense are in competition with JTPA, with IBI often advising private firms how to best deploy JTPA monies. Additionally, the Michigan Department of Small Business and Industrial Training works with IBI officials on a monthly basis, and has had Lake Michigan College officials explain IBI to other Michigan community colleges.

Internally, IBI has also had a strong impact. Initially many faculty, especially those in the technical education programs, were wary of IBI. Concerns were voiced over the hiring of 8 new adjunct trainers and 22 part-time trainers and the unrestricted ability of IBI to go outside the college to deliver customized training programs, some of which with slight modification would become eligible for continuing education credit. While ever increasing sums of money were delivered from IBI programs to the College General Revenue Fund, these monies did not directly affect and touch full-time working faculty. An internal marketing plan was therefore initiated to address what was termed a general misunderstanding of IBI's mission, as many faculty were concerned that IBI's tail was wagging the dog. Ten percent of the return on investment from any IBI training program involving Lake Michigan College faculty was returned directly to member's department, for use by the department.

The College has received four major benefits from IBI, in addition to the $500,000 contribution to the budget. First, faculty in all areas, from English to History to the technical areas participating as trainers are able to get a flavor for current practices in the private sector. Second, technical division faculty are able to receive a more direct pipeline of information regarding current trends in equipment and technology that can be translated into curriculum improvements. Third, the aforementioned departmental incentives are used however the faculty of the participating department see fit (mostly for travel or equipment). Fourth, there is the benefit of the equipment purchased as part of the contracted training that are residually left over after program completion. Basically, the center had the video capability of a small television station, with facilities available to the institution.

Reflecting upon the program and implications from its success the Director of IBI offered several observations. The impact of the training programs on employer-employee relations has been significant. Quality circles, team building, and other collegial work place concepts borrowed from the Japanese have been integrated into the training programs.

The estimates of functional illiteracy among adult workers are as high as 35 percent in this rural county, these workers can be taught through television. People are so accustomed to viewing television that videotape has become an essential part of the training programs as a very real training device, especially for individuals who possess reading levels well below what is viewed as normal and appropriate for college students. A new thrust is the promotion of small business assistance; if the Institute for Business and Industry is as successful in that area as it has been with customized training, the economic future of Benton Harbor is going to be bright. Clearly, this case study shows that a rural-based community college can make a positive impact on the economy of its service region.

Partnerships: The Bevill Center For Advanced Technology
Gadsden State Community College

To a large extent, northeast Alabama is a microcosm of the entire nation and, consequently, faces the same challenges and opportunities as the entire nation. The Gadsden area represents the industrial center for the eleven county northeast Alabama area. According to University of Alabama studies, Gadsden and Etowah counties are home for over 140 manufacturing companies, more than 2,000 commercial businesses, and a civilian work force for more than 10,000 people. The area unemployment rate, which reached 20 percent in 1982, stood at 13.8% in 1985. Thus, the area is still dealing with lingering effects of the 1980--82 recession, combined with record budget and trade deficits that make American-produced manufacturers non-competitive internationally.

In late 1983, recognizing that the industrial base of the area was threatened by even higher unemployment, Mayor Steve Means appointed a "Blue Ribbon" commission to study the economic potential of the City of Gadsden and Etowah County. The Commission was charged with the responsibility of developing "a unified approach to successful economic development." In conducting its work, the Gadsden Economic Developement Commission attempted to assess

the strengths and weaknesses of the Gadsden area, including: availability of resources; local tax base; industrial recruitment efforts; strength and needs of existing industry; quality and needs of education/job training, health services, tourism, and labor relations; sources of funding for economic development; and quality of life issues. In all, the Commission addressed concerns, problems, and opportunities in 13 different areas and, following extensive deliberations categorized more than 30 specific action items into general recommendations.

In response to the recommendations of the Gadsden Economic Development Commission, the Bevill Center for Advanced Manufacturing Technology was established to provide a focal point for job training and research, to allow for the transfer of the latest in manufacturing technology to industries in northeast Alabama to foster a positive climate for industrial retention and industrial recruitment. The Bevill Center has a nine member board of Directors, with three representatives each from the City of Gadsden, The University of Alabama, and Gadsden State Community College, the area's local community college. Through this partnership the Bevill Center serves as a focal point in northeast Alabama for the economic and industrial development activities of each sponsor. The objectives of the Bevill center are:

-- To enhance the skills of Gadsden State Community College students in industrial and plant maintenance technology, mechanical and civil engineering, electronics and industrial electricity, machine technology, and management science and business operations;

-- To provide technological competence and teaching skills for faculties at community, junior, and technical colleges throughout the State of Alabama;

-- To train, in conjunction with the Alabama Industrial Development Training Program, employees of industries in northeast Alabama in a "state-of-the -art" educational laboratory;

-- To provide employees of northeast Alabama industries with skill competencies in manufacturing technology;

-- To train and retrain unemployed workers in selected fields of manufacturing technology and business operations;

-- To develop research focused on industrial needs and design applications through sponsored research projects;

-- To establish and maintain data on industrial needs and "state -of-the-art" equipment and concepts important to international industrial competitiveness;

-- To conduct feasibility studies and research on new designs, new products, market opportunities, and concept implementation for industries in northeast Alabama;

-- To assist industry in the identification of needs and problems;

-- To develop individually tailored training and research programs, both basic and applied, for industries being recruited to northeast Alabama;

-- To assist in industrial and business expansion by applying technologies developed at The University of Alabama; and

-- To serve as a clearinghouse for the rapid exchange of ideas and personnel between industry, education, and labor.

The Bevill Center of Advanced Manufacturing Technology is conceptually modeled after exemplary programs such as The Center of Productivity, Innovation, and Technology at Chattanooga State Community College (Tennessee), and efforts underway at Milwaukee area Technology College and Minneapolis Community College. The Bevill Center is designed to train workers in state-of-the-art industrial technology, using computers to both design parts and to control the machines that make them. Work at the Center will focus in four core areas: computer-aided design, which students will use to design machine parts; computer numeric

control, in which computer programs are used to direct sophisticated metalworking machines; robotics; and automated inspection.

Organizationally, the Director of The Bevill Center reports to a nine member Board of Directors. There are 8 full time staff, including instructors for the CAD/CAM Laboratory, the Computerized Numerical Control Laboratory, the Assembly Laboratory; a Research Coordinator; and a training Coordinator, as well as two secretaries. Gadsden State Community College (GSCC) renovated a building on the campus for the Center's use as an in-kind contribution. The project's basic expenses, excluding equipment, were about $1.5 million for the first three years of operation, which was paid by the city of Gadsden ($450,000), the University of Alabama ($450,000) GSCC (about $300,000, including in-kind contributions), and industrial participation and Job Partnership Training Act participation (about $300,000). A large grant of $1.3 million was secured from the Tennessee Valley Authority which was devoted almost entirely to capital equipment, because the substantial contributions of the three partners covered basic operating expenses. The center director noted that, "the cooperative efforts of these three entities will give the area a manufacturing technology center like no other in the country."

The primary roles of each of the partners is: (1) GSCC will play the leading role in providing customized training and retraining programs, as well as coursework leading to the associate's degree in new high technology programs, including electrical engineering technology (with specializations in industrial electronics and robotics); mechanical engineering (CAD/CAM); electrical technical/automated manufacturing, and machine shop technology/advanced manufacturing technology; (2) The University of Alabama will take the lead in providing research support, implementing new engineering design systems or plans at a given industrial site, flexibility studies, cost savings studies, and other research support where needed, employing where possible a team approach; (3) The City of Gadsden will be responsible for identifying the needs of existing industry; surveying problems and needs; developing an on-going needs assessment and response program including data network maintenance; and developing plans supporting the recruitment of new business and expansion of existing businesses in the Gadsden area. The University thus plays a support role, offering more specialized training programs that go beyond the resources of GSCC, and a lead role in developing partnerships for major research projects .

The Research Coordinator for the project stated that a national model is being developed here. By bringing together two levels of educational institutions and two levels of the work force, The Bevill Center is developing partnerships of a different kind, with potential national significance. Traditionally, postsecondary vocational training has focused on training students to become technicians, competent with very specialized machinery. At the same time, engineering colleges at universities have trained professional engineers to understand broad, general concepts about how a shop floor operates. Both think the other's perspective is wrong. At The Bevill Center an effort is being made to merge two divergent theories of education and training. Additionally by involving both technicians and engineering/business professionals in the field, working together helps to bridge the gap between the engineering systems that are designed at one level and carried out at another. For example, engineering students can spend summers at the Bevill Center, working with university faculty, technical instructors from the community college, professional engineers from the field, as well as students training to become technicians attending GSCC. The center does more than matching courses, it matches concepts.

The Director of Economic and Community Affairs at The University of Alabama, and a member of The Bevill Center Board of Directors, noted the important focus the Center can bring to the community regarding technology. Other educational institutions from kindergarten through graduate school have the opportunity to become more familiar with technology and how it impacts on their lives. If this high technology training center can revitalize Gadsden's industrial base, it will likely prove to be a model for the entire state, for Alabama is the most heavily industrialized state in the Deep South.

The expanded emphasis on economic development is reflected by the creation of the new Office of Economic Development. In cooperation with the Gadsden/Etowah County Industrial Development Authority, a comprehensive survey of business and industry needs has been completed, and training programs are now underway. All of the GSCC officials interviewed in

preparation for this article have indicated that the process has not always been easy. While The Bevill Center Board may need slight changes, to add additional community and business/industry membership, the President of GSCC, stated that the Board has worked well as a modem to combine the three entities to decide such issues as staffing, funds management, and the like. The Bevill Center shows how a community college can assume leadership in economic development by playing a vital role in attracting new industries and supporting retention of the industrial base, and by providing exposure to new techniques to improve productivity.

Performance Based Contracting,
Florida Community College at Jacksonville

As America begins to deal with its massive human resource development problem, policy makers at the local, state, and federal levels are likely to turn to community colleges. The community college represents a delivery system that is already in place, one that can be used to turn the unemployed, the adult illiterates, and the single women heading families on welfare, and others into contributing members of the society. Given the fact that most of the money for job training, welfare, child care, and adult illiteracy comes from the federal government to the states to be administered, it is useful to examine the Performance-Based Contracting (PBC) already in place at Florida Community College at Jacksonville. This model, with its emphasis on accountability and flexibility, is in all likelihood a precursor of what the future statewide flow through job training will look like when administered at the local level.

To understand exactly what performance-based contracting is, a distinction must be made between "grants" and "performance contracts." Webster's dictionary defines a grant as "give," perform as "accomplish," and contract as "agree or accept." Literally a grant awards dollars to achieve specific objectives within a given program framework. A performance contract on the other hand is a legal agreement to complete a specific objective, or a group of objectives --or products--for which a designated fee will be paid. Grant budgets are developed and presented in terms of line item expenses required to accomplish total objectives, with overall performance measures as opposed to the delivery of specific products. Grant dollars are awarded at the project's start, or in increments during the life of the project, and any unspent dollars are usually returned to the funding source. Only indirect costs and expense support exists in the grant award.

Alternatively, funding for performance based contracts is tied directly to the production and delivery of specific products. The contractor (in this case FCCJ) develops the specifications under which the product is developed and then delivered. This estimate of "fees due" is used to negotiate cost with the funding agent (perhaps the Florida State Private Industry Council, the Department of Vocational Rehabilitation, or the U.S. Small Business Administration, to name a few agents). The funding agent then sets a cost cap ("over this we will not go") for the delivered product and then pays the fees as the products are delivered, according to the agreed-upon contractual specifications. It is the contractor that specifies the level of cost to be incurred in the delivery of the required product; in some cases revenue is accrued and maintained by the contractor (FCCJ). These dollars are not subject to the usage guidelines developed by other types of funded programs, and may be used however the contractor (FCCJ) sees fit. These funds are not tied to operations funding or anything else. As FCCJ publications note, "performance contracting follows the traditional American free enterprise model whereby the college competes on the open market to produce a specific product for a specific fee."

Funding awarded through PBC can be utilized in a variety of ways that might lead to the development and delivery of the final products or outputs. While a specific training program might include course instruction and training on certain types of equipment, these contracted activities will affect tuition receipts and FTE count, as well as equipment purchase or maintenance; it is only the cost of producing the product that is negotiated and contracted.

Thus, there is a level of risk in PBC's and this risk has affected the operations, management, and organization of PBSs at FCCJ. The Vice-President for Institutional Advancement, stated that when FCCJ first got into the PBC business in early 1985, a member of his resource development office staff would write the PBC, and upon reaching a negotiated

agreement, responsibilities for administration would be fulfilled by the various deans of the institution. Problems soon arose, however, because of the misunderstanding on the part of the deans of the fundamental differences between PBC's and grants. The Deans tended to spend money/profits from a budget perspective just like they would a grant, yet the actual money was not paid by the funding agency until the deliverables were received. In early 1986 the college had over 10 different projects in operation, and each project might employ a different placement counselor, a different recruitment officer, and be administered by different units within a large urban community college. Thus, monitoring and financial controls were problems. The Director noted that you can loose money on PBC if you're not careful. He emphasized the funding agencies pay up only when projects are done.

The projects themselves are quite varied, yet all deal with various aspects of human resource development. For example, project titles include Computer Programmer Training for the Severely Disabled, Clerical/Word Processing Training for Unemployed Women and Disabled Persons, Child Care Training Program, and Challenge: Health and Rehabilitative Services, and Displaced Homemaker Training. Funding sources within a given project vary as well, and might include dollars from Goodwill Industries, the Florida State Departments of Labor, Vocational Rehabilitation, Private Industry Council, Health and Rehabilitative Services, and various federal sources. All projects are submitted and approved by the FCCJ Board of Trustees, and usually include significant in-kind contributions from the institution (which could be derived from FTE generated by the project enrollees). Thus the need for coordination and specialization in administering the PBCs is obvious. Under the new structure the same office is responsive for coordinating job placement for all nine contracts in operation, and for recruitment/intake. Thus, the projects now support each other, both in terms of people and dollar resources.

In July of 1987, the organization of performance-based contracts at the college was changed to streamline the administration and monitoring processes. The Director of Development and Operations of Performance Contracting noted that a major problem was that all of the hard money people in the academic divisions of the college had no incentives to run the PBCs efficiently, since they would be paid anyway. For example, assume that a PBC paid $220,000 for giving 1,600 high school dropouts the G.E.D. test. If the administration treated the PBC like a grant, a large percentage of the PBC might be spent before delivery of the product (records showing 1,600 not 1,200 or 1,000 or 1,599 students took the GED test) creating an administrative nightmare. With one office totally in charge, administrative controls and incentives are present, and operations are made more efficient.

Under the new structure, the Director of Development and Operations for Performance Contracting reports directly to the V.P. for Institutional Advancement, with direct access to the President. Responsibilities include: establishing policies and procedures, proposal development and presentation, contract negotiation, authorization of budgets and personnel to perform the contract, representation of the college on issues related to PBCs to the Florida Legislature, funding agencies, and other interested parties, overall supervision of all PBCs and related grants, and evaluation of performance contracting structure. Under the Director are four positions: the Contract Compliance Officer, who collects data and monitors performance by the unit/college prior to the final billing by the FCCJ finance office to the funding agency; a Contracts Operations Officer, who directs coordination between the projects, and helps new projects mesh in with existing operations; a Recruitment/Intake Officer to handle student recruitment/participant intake, eligibility, determination, student orientation, placement and test coordination; and a Job Placement Officer to handle counseling, pre-employment readiness training, job development and follow-up, and documentation. The Contract Operations Officer also handles all employee training, a problem that grew larger as PBC grew at the institution.

The benefits of involvement in PBC's are obvious. Now, FCCJ is an active player in providing critically needed training programs for the most historically underserved at a profit to the college general revenue fund. Presently 9 projects are in operation, with 35 people involved delivering the training, and only 5 of the 35 are funded on regular hard money as college instructors. In the fiscal year ending in June, 1986, PBC returned over $105,000 in unrestricted dollars to the college, from $1.48 million worth of contracts. This does not take into account the indirect costs generated (19.9 percent of all direct costs on funded PBCs), as

well as the equipment available to the institution at the completion of the various contracts period.

Perhaps the greater benefit is the ability PBC offers to enable the college to serve historically disadvantaged and excluded citizens. The college with its new streamlined organization can quickly and directly meet training needs through private and public funding agencies. "The future here is excellent," said the Director, adding, "now I'm a salesman selling a product, and I insure quality." The Vice-President for Institutional Advancement added that the college is a key player in local economic development. The programs we have are offered at Florida Correctional Facilities, at 157 companies through state-funded private industry training programs, and to 2,000 child care providers throughout Florida. The college is an active player now, and that is rewarding.

The Emerging Role of Community Colleges in Economic Development

It is clear that the primary role of community colleges will not be that of direct products and processes research. This will likely remain the role of the research university, with its stronger research capability and base. Additionally, community colleges must make sure that the human resource development/training programs and services they provide do not take sides on the all important issue of job security. Programs such as "Making Unions Necessary" should be avoided because, while attractive to sell to small business management, they can create long-term worker alienation and mistrust between the work force and the community college. A repeat of the traditional mistrust that existed between organized labor and labor relations researchers at American colleges and universities present during the post-World War II period need not be repeated in the post-Vietnam era. Further, community colleges as community-based institutions should not favor one segment of the community over another.

The emerging role of community colleges as key players in economic development seems to serve as:

(1) a community resource by providing human resource development and training, especially to businesses with 500 and fewer employees,

(2) a community resource for economic development planning,

(3) a community resource to collect, analyze, and distribute information on local, social, cultural, and economic trends,

(4) promoters of entrepreneurship within the traditional postsecondary vocational/occupational curriculum

(5) a pool of community resources to assist in the incubation and success of new and existing small businesses,

(6) a community resource to assist in industrial retention through the promotion pooled information regarding new industrial processes and technologies,

(7) a helping agent with any organization or agency whose basic goals-- the promotion of the quality of life through enhanced participation in economic, social, and cultural life--are shared,

(8) helping agents willing to innovate and take risks to stimulate community growth and economic development.

Economic development is clearly not going to be another passing fad. The massive human resource development/training challenges facing the United States today demand attention. For example, estimates of adult illiteracy range from 25 to 50 million Americans. Employment training and transitional child care and medical assistance programs have been devised in a most haphazard fashion. Given their open-door, community-based orientation, community colleges must become more active in the policy making process, especially at the federal and state levels. Many of the programs presently under consideration will be federally

supported and state administered--the key consideration for community colleges is whether or not the flow-through incentives will pass all the way back to the institutions, since they are not limited by trying to achieve a higher-level of Carnegie Commission institutional status, and do not have pre-dispositions about delivering developmental learning services. With community colleges in 433 of the 435 congressional districts, active involvement in human resource policy development will help federal policy makers recognize the reality that an extensive delivery system is already in place, and ready and willing to serve the nation.

References

"Business and higher education: Imperative to adapt," (1986) Issues in Higher Education and Economic Development, American Association of State Colleges and Universities, Washington, D.C., 14.

Greene, Elizabeth (1985) "Colleges hard pressed to meet demands for child care, funds called inadequate" Chronicle of Higher Education , September 25,29.

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CURRENT ISSUES IN COMMUNITY COLLEGE RESEARCH

This section of the journal will focus on three very different concerns which should be of much interest to community college researchers and administrators. The first article by Janis Cox Coffey (a regular contributor to the journal) on a Statewide Management Information System for California Community Colleges focuses on concerns about the use of the new MIS system as a tool for accountability measures and shared governance or a computerized means to state level control. The second article by Trudy Bers describes a cooperative effort by a group of remedial educators to implement a theoretically sound process for collecting and analyzing data on their program. While the data in the article are somewhat dated the findings will provide researchers with meaningful expectations for implementing district or state wide developmental education evaluation projects.

The third article in this series is by George Findlen (also a recent contributor to the journal) who has developed a computerized system for making catalog changes. The system will also serve as a quick reference for questions such as prerequisites for specific courses, courses with variable credit, and courses with labs and lab fees.

The three articles are very different in nature and provide excellent resources for those sometimes hard to come by answers.

MIS IN CALIFORNIA COMMUNITY COLLEGES: SHARED GOVERNANCE OR STATE CONTROL?

Janis Cox Coffey and William B. Hamre

MIS. Data element dictionaries. Data tape submission time frame. These phrases, familiar to data processing directors but until recently almost unknown to the majority of community college leaders and administrators, herald the beginning of a new era in California's community colleges. The advent of the new Management Information System (MIS) at the State Chancellor's Office raises both the highest expectations and the worst fears of many at both the State and local levels. The high expectations are for better information, truly coordinated planning, and accountability for programs, services and fiscal stability; the worst fears concern increased State control, less flexibility for variation among districts, and performance-based funding that pits district against district. While the computer-oriented terminology may be disaffecting at first, few of us can afford to ignore the substantial impact that the State Chancellor's Office's new management information system (MIS) will have on local district operations, evaluations, and potential, funding. From the standpoint of two people who have been involved in the past several years' discussions of community college accountability and governance, the new state MIS may well be the field on which our ideals of shared governance and appropriate accountability are first tested.

In The Beginning.....

A little background is in order. For a number of years, the State Chancellor's Office has had a data processing system that was primarily devoted to handling the reams of paper required for federal and state-mandated compliance reports. The required data elements were largely those needed to ensure the various agencies that districts were spending their money legally, and to describe the kinds of students that they served. Essentially, it was a compliance reporting system which had fiscal accountability as its basic premise, and descriptive demographics and expenditure information as its data base.

Under this system, staff at the local level counted and documented hours of counseling and amounts of services used for such programs as Handicapped Student Services and EOP/S. They counted and documented how many women and members of ethnic minority groups were part of administration, faculty, and student bodies. Local districts responded to requests for this data over the years, first in longhand, tabulated formats, then in computer-generated printouts, and more recently, on computerized data tapes that are now sent to the Chancellor's

Office according to specific timelines. Some districts always sent their data in on time; others did not. Penalties for non-reporting districts have been noticeably lacking for years, except for certain categorical programs where the special funding could be suspended if the reports were not submitted on time.

The Chancellor's Office produced periodic reports with this data, but both the nature of the data and its quality and accuracy left many at the state level with the feeling that the State Chancellor's Office could tell them little of real importance about the community colleges. During the past several years' review of our system, organizations such as the Master Plan Commission and the joint Legislative Committee for the Review of the Master Plan became particularly concerned about what they viewed as an inability of the State Chancellor's Office to respond to policy questions about the colleges with accurate and timely data and analysis.

The Chancellor's Office itself had for several years requested support from the Legislature and the Department of Finance to design, develop, and implement a new management information system designed to simplify and streamline the current morass of compliance reports and to add new types of data that could be used in responding to accountability questions of how well particular initiatives were working, how well our students were doing, and how well districts were faring fiscally. Finally, the internal request coupled with the external criticism and concerns led the Legislature, the Department of Finance and the Governor to allocate funds to the Chancellor's Office to update its data processing system.

From DP to MIS: From Compliance to Evaluation

Whereas the old data processing system was focused on compliance reporting, the new management information system is designed to add the crucial components of performance evaluation for accountability purposes. This concept of accountability for results as the key to shared governance was first discussed by the CEOs and Trustees in A New Partnership in Governance, a document endorsed by all 70 local districts. The basic premise for the new system is educational accountability and the key question is "Are we performing our various missions and functions effectively?" -- a question that goes far beyond documenting student demographics and legal expenditure of funds.

To respond to this basic premise, the new MIS departs from the old DP system and its federal and state-mandated compliance elements by adding new data elements that are, in essence, the kinds of data elements kept at the local district level to generate information on student enrollment status, grade point average, retention, and graduation status. The new elements include, for example, full student transcript information that is essential to answering such questions as: "What proportion of students in remedial English courses ever go on to Freshman Composition?" "Is there an entry performance level beneath which students have little chance of success in college-level courses?" "Do some minorities persist and graduate at higher levels than others and in which programs?" "How well are women and ethnic minorities doing in terms of completing particular vocational programs?" Other data elements focus on the fiscal stability of districts, an issue of considerable importance over the past three years since several districts have had to seek special funding from the Legislature to meet their fiscal obligations.

These new data elements lead to important questions that can and should be answered both at local and state levels, and that can provide the Legislature and other entities the answer to the basic question about our educational enterprise: Is what we're doing working an how do we know? The advent of this new management information system is a major step forward in the ability of the Chancellor's Office to gather, analyze and use accurate data in responding to policy questions on behalf of the California Community Colleges. However, the existence of such detailed performance and evaluation data in the State Chancellor's Office also raises the spectre of that office publishing reports concerning local districts' performance on particular measures that could be embarrassing or worse.

The Problem: Appropriate Accountability vs. State Control

In the move from compliance reporting to educational and fiscal accountability, the determination of policy research questions to be answered, the setting of evaluation criteria and the choice of performance measures to which colleges will be held are the critical

components of the accountability process. The key question is: Who is to determine the evaluation criteria and appropriate performance measures?

At this point, the Chancellor's Office is negotiating the development and implementation of the MIS (which is now being pilot tested with five local districts) only insofar as data elements and timelines for submission are concerned. Once the data elements are agreed to the timelines set, and implementation funding provided data tapes containing the elements will be sent by districts to the Chancellor's Office, just as they were under the old system. Once these tapes are in the Chancellor's Office, the data elements can be combined in any number of ways, based on the current needs of such organizations as the Legislature, Department of Finance or the Postsecondary Education Commission.. While negotiation about data element definitions and timelines are useful and appreciated, negotiation of data elements and timelines must be combined with negotiation of evaluation criteria and performance measures. Absent such consultation, districts would be sending off data tapes without knowing how the elements would be combined or used--with the prospect of being negatively evaluated on such highly political programs as transfer centers, matriculation, or affirmative action. Given the legislative interest in differential or program-based funding, and in annual "report cards" on local districts' performance, how a district is evaluated on a variety of measures takes on new and substantial significance, since not only reputation but funding could be affected.

If performance evaluation information is central to appropriate accountability, then local districts need clear expectations concerning the uses of, and access to, the new MIS. Absent agreement with local districts on research questions, evaluation criteria and performance measures, the Chancellor's Office retains total control of the accountability process, with local districts merely providing data elements on tape to be combined and recombined as state-level organizations see fit. Such a situation would threaten the development of a true shared governance system, in which both the Chancellor's Office and the local districts jointly determine the future of our colleges. Given the great potential for improved accountability--to our students, to the local communities, to state-level interests--that the new MIS offers, the question is: How can local districts and the Chancellor's Office work together to make the MIS an integral part of the shared governance process?

The Solution: A State/Local System Response

Both the State Chancellor's Office and the local districts are in positions to make the new MIS work to produce benefits at both levels. First, at the state level, the Chancellor's Office through the consultation process should identify the types of policy research questions they expect to be asked to answer. Many such policy questions have been raised over the past several years by the Legislature, CPEC, and the Master Plan Commission. A review of pertinent policy questions, conducted in consultation with research and policy staff from local districts, could provide impetus for initial investigations of the new MIS data. A common policy research agenda could be developed that would assist the local districts, as well as the Chancellor's Office, in answering major questions about their students and their performance.

Second, once policy questions are identified, appropriate evaluation criteria and performance measures to be used in judging how well districts are meeting particular objectives should be developed thorough consultation between the local districts and the Chancellor's Office. While setting statewide goals and objectives that the system's colleges must meet is a state-level responsibility, determining how best to achieve those objectives at the local level is clearly a district responsibility. Measuring the effectiveness of districts, both locally and statewide, in meeting the goals and objectives, is a shared responsibility of those at both levels. Involvement of local districts in determining research questions, evaluation criteria and performance measures will enhance the program evaluation and improvement capabilities of both the Chancellor's Office and local districts.

Third, at the local level, districts should review and evaluate the data tapes they are sending to the Chancellor's Office on such high priority programs as student/staff affirmative action, matriculation, transfer centers, remedial education, ESL and adult basic education. Major statewide policy issues have revolved around each of these areas and such "before the fact" evaluation of data tapes will allow local districts to know what the tapes they're sending say about them.

Fourth, and perhaps most important, local districts should undertake, and the new MIS should support, their own formative evaluations to determine early on whether what they are doing in particular program or service areas is working to benefit their students. If local districts include the state-mandated data elements in early program evaluations, they can check the appropriateness and accuracy of the elements for evaluation purposes and share their views with the Chancellor's Office. Such information is crucial to cooperative development of an effective MIS. If combined with such local initiatives as student surveys or staff interviews, the state MIS can truly assist the local districts in determining how well a particular program or service is meeting its objectives, and how what the local district is doing compares to others across the state. In addition, by having access to an integrated MIS at the state level, not every local district will need to spend the time and money necessary to develop their own fully integrated data base-- they can access the Chancellor's Office MIS for new combinations of their own data, or for comparative data from other districts.

In Conclusion

The new state MIS, as stated in the opening of this article, will have a substantial impact on local district operations, evaluations and, potentially, funding. While its components are relatively neutral, its uses are not. Whether the new MIS is the long-awaited key to appropriate accountability and true shared governance, or the computerized means to state-level control, depends entirely on how it is used. The success of the new MIS development is an essential component in the shared governance process, and is dependent on precisely the same elements as is the health of the community college system as a whole: cooperation, trust, and a good working relationship between the local districts and the Chancellor's Office. Several current undertakings augur well for such a cooperative relationship, including the Chancellor's Office's request for funds to establish a field advisory committee to help further develop and implement the accountability concepts embodied in the recent reform legislation (AB1725). The Chancellor's Office staff are also meeting with local district representatives on such issues as matriculation and transfer center evaluations. If local districts and the Chancellor's Office continue to share in the development of the system as they have been doing-- and if they begin to share in the design for its use-- the new MIS will be helpful to those at both the State and local levels. Appropriate accountability will improve education and ensure the wise expenditure of resources and that, surely, should be the "bottom line" for us all.

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EVALUATING COLLEGE REMEDIAL/DEVELOPMENTAL PROGRAMS: RESULTS OF A COOPERATIVE EFFORT AMONG COMMUNITY COLLEGES

Trudy Bers

Introduction

Several national concerns have converged to focus attention on remedial/developmental education. These include recognition that a substantial number of high school and even college graduates lack basic skills in reading, writing and computation; that many adults are functionally illiterate; and that states are reimbursing several levels of education to provide essentially the same remediation, often to the same individuals. Combined with a general emphasis on school reform, accountability and cost containment, these concerns have prompted many institutions and states to review their remedial/developmental programs in an attempt to provide fiscally sound, high quality education that enables individuals to remediate their academic skills deficiencies and to succeed in college-level studies.

Purpose

The purpose of this article is to present the results of an attempt by a group of remedial educators in Chicago area community colleges to develop and implement a theoretically sound and useful process for gathering and analyzing data about their programs. CADRE, Chicago Area Developmental/Remedial Educators, is a voluntary, informal group of community college representatives who share common concerns about organizing and administering remedial programs and courses, and responding to internal and statewide questions about program costs and quality. This cooperative evaluation project marks a novel and pioneering effort by remedial educators, who are not researchers by training, to grapple with the details of research designs, data collection, and program analysis.

In an earlier study, Bers and Bentley (1984) described the background of this project and the process used to develop shared procedures for data collection and analysis that were feasible within the constraints imposed by each institution. In this article summary results of the research are presented, and benefits and difficulties of collaborative research efforts are identified.

Many issues related to evaluating remedial programs and services have been noted in the literature. The lack of clear, uniform definitions of remedial education and services and variations in program structures and accounting systems across institutions have ben noted by Keimig (1983) and the Illinois Community College Board (1983). Many, e.g., Noel and Saluri (1983) and Sherman and Tinto (1975), have commented on confusion and inconsistencies in defining appropriate dependent variables that measure success. Roueche (1983), Boylan (1983), and Barshis and Guskey (1983) have suggested characteristics of successful programs. Morris and Fitz-Gibbon (1978) discuss evaluation in more general terms, and present seven classes of program evaluation models and their respective emphases. Crucial for colleges to remember as they attempt to evaluate their programs is the reminder of Cronbach et. al. (1981): evaluation is essentially a political process.

Several attributes of the evaluation effort reported in this paper make it distinctive: it was voluntary on the part of participating institutions, was initiated by program administrators themselves, and was intended to provide them with information useful for their institutions. The primary beneficiaries of the evaluation were the program directors, who continue to face growing pressure for accountability through demonstrating the outcomes of their programs. They learned not only about their programs. but about the fundamentals of empirical research as well.

Data Sources and Methodology

Data on 549 students enrolled in developmental courses at six community colleges in a midwestern metropolitan area were collected. One college subsequently dropped out of the study, so that the follow-up (stage two) data on only 449 students were available. Program directors from each college worked together to identify appropriate variables for inclusion in the study, to assess whether these data were available at their institutions, and to collect them. By working from a common research design participants hoped to facilitate comparative analyses among institutions as well as to identify student attributes that were associated with successful completion of remedial courses, successful completion of college-level courses, and persistence at their respective institutions.

Several sets of information were used. The first set comprised data about students. The actual collection of data occurred in two stages. During stage one, each college randomly selected 100 students enrolled in one or more remedial courses in the fall of 1983 (one college included its entire population' of 49 remedial students as its sample). Demographic items, assessment and testing results, and information about course enrollments and performance were gathered. Most colleges completed this effort during the spring 1984 term. During stage two, data about performance in spring 1984 courses and persistence to the fall 1984 term were compiled.

A second set of data came from a survey by each institution. Questions focused on the structure, processes and funding for developmental programs. Directors spent many hours attempting to develop specific and uniform definitions for such variables as "program."

"program staff," and "course." The survey also included a section on funding, since a primary objective at the outset of this project was for each director to be able to compare his/her program costs with costs at neighboring colleges.

A third set of data was less formal than either of the above. It consisted of the observations of project participants as they designed data collection instruments, collected data, and reviewed results.

Findings About Students

Remedial Students' Characteristics

The 549 students in the original (stage one) CADRE sample were ethnically diverse, young compared to the population of students at their colleges, predominantly new enrollees in college, and slightly more likely to be female than male. Only a few were classified as ESL, though data about English language proficiency were provided for only 54% of the sample because some schools did not record this information or it was missing for some students.

Typical studies of academic performance correlate variables such as high school rank and grade point average, English language proficiency, and employment with academic outcomes. Unfortunately, these data were available for only a small number of students in the sample. This paucity indicates that colleges were working with students about whom they lacked basic information useful in counseling and program planning.

Academic status and performance

Approximately equal numbers in the sample were enrolled as full-and part-time students during the fall 1983 term. One quarter were receiving financial aid during that term. The average cumulative grade point average through the fall 1983 term was 2.15 (out of 4.0), with 23% earning GPAs of 3.00 or above. Nearly two-thirds completed 75% or more of their courses, and the mean course completion was 81%. Data on 459 students for whom stage two data were provided show that through the fall 1984 term they earned a mean cumulative grade point average of 2.12 with 15% earning a 3.00 or better.

Some three-quarters of the students enrolled in their colleges in the spring of 1984, and half of those continued through fall 1984. Since most studies report that persistence rates in community colleges are well below 50%, this finding suggests retention among students enrolled in developmental courses is at least as high as retention among students who enter college-level courses immediately.

Remedial work

Of those students who were tested for entry into math, writing, or reading courses, the majority required remedial education. Given the method for drawing the sample, this is not surprising, since the population from which the samples were drawn was composed of all students enrolled in one or more remedial courses in fall 1983.

What is striking, however, is the high percentage of students for whom there is no recommendation about remedial work. A majority received no recommendations regarding their writing competency, and two-thirds received no recommendation regarding their reading or math competencies. Thus many students whom the institution classified as remedial enrolled in one or more remedial courses based on self-assessments that assistance was needed. Enrollment was larger in remedial mathematics than in remedial writing or reading courses. Of those enrolled in remedial courses, a large majority passed. At the same time, however, many continued to need additional remedial work, especially in writing. This suggests that one remedial course may not provide sufficient remediation for students who have reached college age with persistent deficiencies in basic academic skills.

Fewer than half of the students in the sample proceeded to enroll in college-level writing or math courses. Of those who did enroll in these college-level courses, however, half succeeded in passing. Since data about students' objectives in enrolling at the college and in specific remedial courses were not available, and since some may have met their goals without

enrolling in a college-level course, it is difficult to interpret the meaning of this finding. Moreover, a student may have had excellent academic or personal reasons for delaying enrollment in a college level course until after the spring 1984 term, beyond the period of this research.

The above discussion provides simple descriptive information. Several more sophisticated analyses were also conducted to assess the extent to which demographic characteristics of individual students were associated with their performances and persistence.

Individual Characteristics, Performance and Persistence

Chi-square tests of association between enrollment in remedial and in college-level courses, and a number of demographic and academic characteristics of students were conducted. These variables included students' sex, age, ethnicity, and college (to see whether student performances varied among colleges). The findings show there were no statistically significant associations except for variations in completion rates of remedial writing and reading courses among the colleges. However, one college enrolled 57% of all students taking remedial reading, and three institutions reported only 4 or 5 individuals enrolled in remedial reading courses. It is likely that the statistical differences noted here are an artifact of one college's practices regarding remedial reading courses. Variation among colleges with regard to remedial writing courses seem to be less related to one college. The percent of students passing remedial writing ranged from 42% to 96%.

Chi-Square tests of association were also conducted to investigate the relationships of students' demographic and educational characteristics and their persistence at college. Some statistically significant associations were found. Most strikingly, there was a strong association between successful completion of remedial courses in the fall of 1983 and persistence to the spring 1984 term. Eighty-seven percent of those who completed at least one remedial mathematics course returned to the college, and comparable figures are 88% for writing and 84% for reading. There was a statistically significant difference among colleges in fall to spring retention, with retention rates ranging from 75% to 96%. Students receiving financial aid were more likely to continue at their colleges through the following fall than were students who did not receive financial aid, and the retention rate was higher among younger than among older students.

Interestingly, grade point average was not associated with retention for the spring semester, but was related to retention through the fall term. That is, students who earned a low grade point average were as likely to continue from the fall 1983 to the spring 1984 term as those earning a higher GPA, but were less likely to continue to enroll in the fall 1984.

College Program Findings and the Process of Evaluation

The original research design called for each college to complete a survey to provide information about the structure, processes and funding for remedial programs. Although CADRE members spent many hours attempting to develop an acceptable instrument and common definitions for data, success was minimal. Even though all institutions were in the same state and subject to the same state funding formulas, differences between institutions were simply too great to permit valid comparisons.

While unsuccessful, the attempt to compare remedial programs enabled CADRE members to focus discussions about specific program attributes and to develop a sense of similarities, differences, and varying approaches to remedial education within six colleges. Major institutional differences that were noted by project participants included whether:

1) remedial education took place within formal classes or in noncredit settings such as learning laboratory tutorials;

2) or not the college recognized a separate remedial program supported by staff and budget;

3) a designated full-time administrator had authority and responsibility for scheduling, staffing and evaluating remedial courses and ancillary services such as tutoring, or whether these responsibilities were distributed among several administrators carrying other duties as well;

4) the institution budgeted hard dollars or relied on grant funds for remedial education;

5) colleges established mandatory or advisory assessment testing and placement in remedial courses; and

6) ESL and other special needs students were incorporated into remedial courses or were treated as separate populations.

Discussion

The analysis presented above attempts to identify associations among student demographic and academic characteristics, academic performance, and retention among a random sample of students classified as "remedial" in six suburban community colleges. Empirical findings presented here must be treated with caution. Colleges adhere to different policies and practices to identify and classify students as "remedial" and use different testing and course placement procedures. In addition, data were incomplete for many students, since many institutions simply did not collect or record information. However, as a first attempt by remedial educators to collaborate in designing and implementing a research project to provide quantitative data about their students and their programs, the study is important.

CADRE members gained many specific benefits for their collaborative efforts. For the sake of brevity, these are presented in list form. CADRE efforts:

- Fostered discussion among remedial educators about such issues as identifying and classifying remedial-developmental students, testing and course placement, and organizational and structural considerations affecting remedial education.

- Promoted an attempt to systematically collect and analyze quantitative data about a population CADRE members serve and have some responsibility for, but know relatively little about.

- Provided the support of a professional researcher to assist in designing the research process and format for data collection and to analyze and report findings. Such support was unavailable or very limited at some participating institutions.

- Provided professional development for remedial educators, who learned about research approaches and methods through participation in this project.

- Enabled tentative comparisons to be made among schools with respect to the academic performance and retention rates of their students, within the limitations of data accuracy.

- Identified important variables for the understanding of remedial students and remedial education that are not collected by colleges. Examples include data about employment, English language proficiency and educational objectives.

- Developed awareness of the difficulties and potential benefits of comparative studies among institutions, and a recognition that programs within public community colleges in the same state may be sufficiently different in content and administration to prevent ready comparison.

Conclusion

There is a clear national desire that all high school and college graduates have basic competency in reading, writing, and mathematics. State and local education agencies are facing strong pressure to address this concern, and funding agencies are increasingly reluctant to support programs that are unable to account for their success in providing basic competency

training. Thus remedial educators are investing greater efforts in clarifying and evaluating their programs.

While theoretical models for program evaluations abound, and while case studies of program evaluations conducted at single institutions are readily available, the research reported in this paper provides the findings and experiences of administrators from many colleges in working together to develop and implement a sound model for the benefit of their own institutions. Though shortcomings of the model were serious, the overall value of the experience was considered sufficiently positive to prompt the group to consider improving and repeating the collaborative research effort again. However, subsequent informal discussions with CADRE members indicated that other obligations eroded their commitments to repeating this project.

The experience of developing and implementing a cooperative research model has given CADRE members realistic expectations about the conceptual difficulties in and pragmatic barriers to evaluating their own programs and making meaningful comparisons with others. This knowledge, more than the specific data about an institution's students, was the most valued outcome of the project.

References

Barshis, D.E., & Guskey, T.R. (1983). Providing remedial education. In Vaughan, G.B. (Ed.), Issues for Community College Leaders in a New Era. San Francisco: Jossey-Bass.

Bers, T.H., & Bentley, K. (1984). Evaluation of college remedial/developmental programs: A cooperative approach. Paper presented at the Association for Institutional Research Forum, Fort Worth, Texas.

Boylan, H.R. (1983). Characteristics of successful programs. Research in Developmental Education, 6(1), 1-2, 5-6.

Illinois Community College Board. (April, 1983). Report on Remedial Education, Springfield, IL.

Keimig, R.T. (1983). Raising academic standards: A guide to learning improvements. Washington, D.C.: ASHE-ERIC/ Higher Education Research Report No. 4.

Morris, L.L., & Fitz-Gibbon, C.T. (1978). Evaluator's Handbook. Beverly Hills: Sage Publications.

Noel, L., & Saluri, D. (March 1983). Setting and assessing learning outcomes: A fresh approach. In Roueche. J.E. (Ed.), New Directions for College Learning Assistance: A New Look at Successful Programs. No. 11. San Francisco: Jossey Bass.

Sherman, R.H., & Tinto, V. (1975). The Effectiveness of Secondary and Higher Education Intervention Programs: A Critical Review of Research. Paper presented at the annual meeting of the American Educational Research Association, Washington, D.C.

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FASTER AND MORE ACCURATE CATALOG CHANGES

George L. Findlen

As long as college catalogs have been printed, annual changes in the course descriptions section of the catalog have required visual searching. For example, when Delgado Community College's curriculum committee deleted MATH 100 fro the curriculum, someone had to examine the entire 60 pages of course descriptions to locate all of the courses which required MATH 100

as a prerequisite. Such a process is prone to error. It is difficult to explain to students that they must take MATH 130 before taking MOVH 106 when they have a copy of the brand new college catalog showing MATH 100 still listed as a prerequisite for MOVH 106 but not listed as an available course in the MATH listings!

Unanswered Questions

The question of "What courses require another course as a prerequisite or corequisite?" is only one of the questions that requires an entry-by-entry visual search of the catalog. There are many more,. Examples include:

- "How many separate courses (by number, not by title) does the College offer?" This question is often heard at regional and national meetings as well as from the state Board of Regents.

- "Which programs require MATH 117, Technical Trigonometry, as a prerequisite for their beginning courses?" "Which require MATH 130, College algebra, instead?" Lead instructors and division chairs proposing a new course frequently ask this question.

- "Which programs have been permitted to require ENGL 101, English Composition I as a prerequisite to an introductory course?" At Delgado Community College, social service and humanities faculty members ask this question with regularity.

- "Does Delgado offer any courses for 6 hours of credit?" " Do any have variable credit?" Delgado's Community Projects (Continuing Education) staff and the instructors of some laboratory-intensive courses ask this question.

- "Does Delgado have any courses for which credit will not be recorded unless the accompanying lab is completed?" Delgado's General Science faculty have often asked this question.

- "Which courses do not count for a major or degree?" This question has come from many sources.

In the past, someone in the Office of Academic Affairs at Delgado Community College would have to reach for the catalog and hope not to miss an entry which contained part of the answer. If a copy of the catalog was not nearby, the staff member would have to admit ignorance of the answer. With the use of the PC, their problems need no longer exist. The entire course descriptions section of the college catalog has been typed into a dBASE-III file using a personal computer. Now, relatively easy commands put counts on the screen in seconds or send lists to the printer to be shared with others. Now, the Academic Affairs staff members can obtain accurate answers to the above questions and do so quickly. More importantly, the staff has an easy-to-use tool for reducing and hopefully eliminating errors from the course descriptions section of the catalog.

A few examples will make these benefits clear. No one at Delgado had ever taken the time to hand count the number of separate entries in the course listing section of the catalog. Turning each of the 60 pages was too time-consuming and error prone. For the same reason, no one had taken the time to count the number of separate course numbers that the college had in the catalog. The COUNT command of dBASE-III produced an accurate answer in half a minute. In the past, when a catalog revision was prepared, a staff member had to visually examine the entire 60 pages of descriptions to find all courses which had added or dropped courses as prerequisites. If MATH 100 is dropped, and MOVH 103 has it as prerequisite, then MOVH 103's prerequisite line must be changed. The dBASE-III LOCATE and CONTINUE commands enable staff members to locate all without error.

For institutions who may be contemplating a similar project a description of the structure of the dBASE-III file created at Delgado and how the data was loaded follows. A basic knowledge of a database software package is assumed.

The Database Structure

The dBASE file structure shown in Table 1 is the one currently in use at Delgado. Since other college catalogs may vary, readers should consider the Delgado file as a model to modify for their own college catalog. The descriptions section of Delgado's college catalog contains 905 entries describing 1,212 courses. (Some entries describe more than one course.) The information covers 60 catalog pages. The dBASE file holding the course descriptions is in a DEC Rainbow 100+ which has a 20MB hard drive. The dBASE file structure for Delgado's CATALOG and an explanation for each of the field's contents is described below. Reference to Figure 1, which lists three entries from Delgado's college catalog, will clarify the choice of fields.

Table 1.

File Structure for Course Entry Into a dBASE File

Field Name	Data Type	Field Width
PREFIX	C	4
NUMBER	C	15
N_COURSES	N	1
CROSS_REF	C	17
TITLE	C	55
LAB_FEE	L	1
CREDIT	C	9
CRWORD	C	8
PREREQ_1	C	110
PREREQ_2	C	110
PREREQ_3	C	110
COREQ_1	C	110
COREQ_2	C	110
NOTE	C	110
HEGIS	C	9

Figure 1

Sample of Catalog Entries - Delgado Community College

ELST 230 Digital Circuits Fundamentals (formerly ELST 170) 3 cr.
Fundamental concepts of number systems and logic circuits and development of the truth table. This course introduces the organization of the digital computer system. Prerequisites: ELST 152, 154. Corequisite: ELST 232. Note: Credit will not be awarded in both this course and ELET 271. (47.0101)

MUSC 181-182-183-184 Chorus each is 1 cr.
Preparation and performance of standard popular and classical repertoire of choral music of past and present. This course is open to all students. (50.0903)

FPTC 221 Hazardous Materials 3 cr.
Properties of hazardous materials and the methods that are most appropriate for handling the various kinds of accidents that can occur with these substances. Also INET 221. (43.0203)

The course PREFIX and course NUMBER fields are obvious. These two fields are the most important way that staff members have of locating catalog entires (ENGL 101, for instance). The NUMBER field is 15 characters long because Delgado's catalog has some lengthy numbers. For instance, "115-175-215-275" is the number for Track in Physical Education and "051 through 054" is the number for Developmental Mathematics in Developmental studies. Both signify that a given course can be taken up to four times.

The N_COURSES field holds the number of separate course numbers contained in a single entry in the catalog. Each record (line or entry) in the database is one entry in the catalog. That may be ENGL 101, a single course, or PHYE 115-175-215-275, four courses. The N_COURSES field holds the number of separate course numbers that are listed in the NUMBER field (1, 2, 3, or 4). The most common entry in the N_COURSES FIELD after 1 is 2 for lecture-lab combinations. The field permits staff members to count how many separate courses that Delgado offers as well as how many separate entries there are in the catalog.

The CROSS_REF field holds cross listings. For example, FPTC 221, Hazardous Materials, is also INET 221 and OSHA 191. The field is long enough to hold two course prefixes and numbers. This field has already paid off. With it, one staff member noticed that the current catalog's entry for FPTC 221 does not list OSHA 191 as a cross listing. This is a potentially irritating error which might cause difficulty to a student trying to graduate with a degree in Fire Protection Technology: someone might not notice that OSHA 191 can substitute for FPTC 221. The field is important since, if the curriculum committee adds or deletes a course that is cross listed, a CROSS_REF statement must appear in the catalog at each of the cross listed course(s).

Delgado's catalog has an asterisk just before the credit hour number if a lab fee is assessed for the course. Thus the database has a logical field for LAB with a Y for yes and N for no. The field permits database users to list all courses in a given prefix which do assess a lab fee and which do not.

The CREDIT field is long enough for the two odd cases in Delgado's catalog in which a single entry represents three different course numbers, each having a different credit value. One of them is RADT 151-152-153 for which the credit hour values are "2, 4, 4." The credit hour value is separated from the words associated with it for convenience. CRWORD is usually "cr." but can also be "cr. each" for entires containing two or three course numbers, each of which have the same credit hours or it can also be "cr. TBA" as it is in the case of Special Topics courses for which the number of credit hours are determined as the courses are approved.

The PREREQ fields hold more than the usual course prefix with course number. From time to time they hold choices that are quite long or even messages. CHEM 210 has "CHEM 101, CHEM 141, or permission of the division chairman," and HESC 200 has "Students must meet the eligibility criteria as established by the Louisiana Bureau of Emergency Medical Services." The PREREQ fields are quite important since they enable database users to locate all courses requiring another course as prerequisite when they delete that second course from the catalog. When the curriculum committee makes one course the corequisite of another course, staff members must look at the second one to ensure that it lists the first one as a corequisite.

The NOTE field is reserved for messages relating to whether the course may be used to meet major or degree requirements. For instance, BIOL 101 has "This course may not be used for credit in the general science curriculum" and COMP 105 has "Not open to Computer Science or Computer Information Systems majors."

The HEGIS field holds that number within parentheses. (The federal government collects educational data for its Higher Education General Information Survey. The survey uses a numeric code for each subject of study.) Not all courses in a given prefix have the same HEGIS, so the field permits staff members to list all courses by HEGIS to ensure consistency. The Louisiana Board of Regents requires all state institutions of higher education to assign a HEGIS code to each course and print it in the college catalog.

Several examples may make the above clearer. The three catalog entries listed in Figure 1 are shown in Table 2 as they are entered in the database. Naturally, the examples will appear

Table 2.

A Sample of Catalog Entries as they Appear in the Database

Field Name	Field Contents
PREFIX	FPTC
NUMBER	221
N_COURSES	1
CROSS_REF	INET 221
TITLE	Hazardous Materials
LAB_FEE	N
CREDIT	3
CRWORD	cr.
PREREQ_1	NA
PREREQ_2	NA
PREREQ_3	NA
COREQ_1	NA
COREQ_2	NA
NOTE	NA
HEGIS	(43.0203)
PREFIX	ELST
NUMBER	230
N_COURSES	1
CROSS-REF	NA
TITLE	Digital Circuits Fundamentals
LAB_FEE	N
CREDIT	3
CRWORD	cr.
PREREQ_1	ELST 152
PREREQ_2	ELST 154
PREREQ_3	NA
COREQ_1	ELST 232
COREQ_2	NA
NOTE	Credit will not be awarded in both this course and ELET 271
HEGIS	(47.0101)
PREFIX	MUSC
NUMBER	133-114
N_COURSES	2
CROSS _REF	NA
TITLE	Beginning Piano
LAB_FEE	Y
CREDIT	2
CRWORD	cr. each
PREREQ_1	Appropriate theory courses and ensemble
PREREQ_2	NA
PREREQ_3	NA
COREQ_1	NA
COREQ_2	NA
NOTE	NA
HEGIS	(50.0904)

differently on the personal computer's monitor since dBASE arrays each field as a separate column.

Several of the fields in the database for Delgado's CATALOG are not used in other college catalogs. Many other community and junior colleges do not indicate whether a lab fee is charged and many others do not list a HEGIS number. It is a simple matter to leave those fields out. Likewise, many other colleges have fields in their catalog database that Delgado does not use. One is the number of clock hours per week that a course meets for lecture and how many the course meets for lab. Again, it is a simple matter to add those fields when defining the structure of the database. The database can contain whatever information that the users want to use. However, users should ask themselves what each field will enable them to do before including it in order to avoid needless work and wasted space. After a year or two of use, users can modify their database to better suit their needs.

Data Entry with a Word Processor

Getting all 905 entires (60 catalog pages) typed was a lengthy task. As with many community colleges, Delgado's staff is small. Only one secretary is available to do clerical work for a director of institutional research, a director of curriculum development, and a coordinator of academic program reviews. Due to the secretary's workload, the assignment was to type catalog entries as time permitted. The task took over a year to complete. Editing the whole file took additional time.

The secretary did not have access to a personal computer with Ashton-Tate's dBASE-III when the typing began, so the data was typed as a list processing file on the secretary's dedicated word processor, a Digital Equipment Corporation DECmate-II. At the editing stage, what at first seemed to be an inconvenience became a boon. The DECmate-II uses a form of gold-key word processing which permits sorts, searches, individual search-and-replace operations, global search-and-replace operations, and a spelling check. When the project began, the intention was to do all searches and changes on the DECmate. To facilitate the editing process, the catalog entries were typed into three separate files (ACCT to ELCO, ELET to MANG, and MANU to WELD).

When all entries of the catalog were typed into the word processor, a staff member converted the file to a dBASE FILE. Those who wanted to convert a word processing file to a dBASE-III file should follow these steps.

1) Using the word processor, create a user defined key (UDK -- usually called a macro) to convert the word processing file contents into comma delimited format. The beginning of a record should look like this:

   "ACCT", "101","1", "NA", "Accounting I", "N","3","cr."

2) Convert the resulting comma delimited word processing file to a text or plain ASCII file. The ASCII filename cannot be more than eight characters long and cannot have one of the dBASE-III file extensions.

3) Create a dBASE file, making sure that the fields are wide enough, and use the APPEND FROM <filename.ext> DELIMITED command of dBASE to pick up the file.

Using a word processor to type in the data may be easier and more comfortable for those who do a lot of word processing; however, once a minimum of skill with dBASE-III is acquired, most PC users will prefer direct data entry with that software.

Future Changes

As staff members in Delgado's Office of Academic Affairs use the new file, a current field may prove to be unneeded or a new field may need to be added. The beauty of dBASE-III is that users can easily MODIFY STRUCTURE to add or delete fields. One which will be added to Delgado's CATALOG database will be a memo field in which to put each course's prose description. It will probably take one or two iterations for Delgado staffers to learn to use the file in preparing the copy of each year's changes for the company that prints the catalog. The long-term benefits outweigh the tedium of creating it, however.

The database has already proved beneficial for Delgado. The software permits LISTing a single field at a time. During a final editing session, a staff member noted that several HEGIS numbers were either printed incorrectly or were missing all together. The error had not been detected before. In the same editing session, a staff member used the LOCATE command to go to every course cross-listed by another. One of the cross-listed courses was found to be missing its mate: the entry for INET 221 noted that it was also listed as FPTC 221, but the entry for FPTC 221 did not note that it was also listed as INET 221. Again, the error had not been detected. previously. Not only is it more accurate, but the time saved in catalog searches will more than pay for the development of the system. Staffers are now committed to using the CATALOG dBASE.

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An ERIC Report

RESEARCH OF ENROLLMENT INFLUENCES AT COMMUNITY COLLEGES

Mary Hardy

Faced with declining enrollments, community colleges have placed more emphasis on conducting research of enrollment influences. The following citations and abstracts represent a selection of the most recent ERIC documents which employ a variety of methods to study enrollment influences.

Full-text copies of these and other ERIC documents can be ordered from the ERIC Document Reproduction Service (EDRS) in Alexandria, Virginia (1-800-227-3742) or can be viewed on microfiche at over 700 libraries in the U.S. Please contact the Clearinghouse for an EDRS order form or a list of libraries that have ERIC microfiche collections.

California Community Colleges. Office of the Chancellor. Study of Fee Impact: Final Report. Report No. 873. Sacramento: California Community Colleges, 1987. 89 pp. (ED 284 645)

The results of a study conducted to assess the impact of the recently imposed mandatory fee on California community college enrollments are presented in this report. Following a summary, background information, and materials on the timing and content of the study, findings are presented with regard to the impact of the fee on student enrollment; ethnic distribution of students; income distribution of students; distribution of full- and part-time students; changes in staffing and costs of administering fees; the availability of federal, state, and other sources of financial aid; and the administration and distribution of financial aid by the Chancellor's Office and college districts. Among the findings highlighted are the following: (1) in spite of a budget increase, credit enrollment in California community colleges declined by 7% in 1984 (nearly twice the loss which took place in colleges across the nation), indicating that the new enrollment fee did contribute to the enrollment loss; (2) few of the effects reported for 1984 in California continued into 1985; (3) in 1985, credit enrollment stabilized and there was a slight return of low-income students, which may have been due to the large second-year increase in financial aid; (4) both credit and non-credit enrollment increased in fall 1986; and (5) the Board's Financial Assistance Program had less than the expected impact in its first year, but exerted a positive impact on enrollment in the next two years. Appendices include a description of the Fee Impact Study Advisory Committee; data on enrollment and participation rates, 1980-86; national enrollment data; an analysis of district changes; data on student socio-economics, 1984-86; and fee administration information.

Doan, H. M., and Verroye, P. Retention/Attrition and Student Educational Objectives: NVCC Winter 1985 First-Timers. OIR Research Brief No. RB 85/86-07. Annandale, VA: Northern Virginia Community College. Office of Institutional Research, 1986. 14 pp. (ED 271 142)

A study was conducted at Northern Virginia Community College (NVCC) to determine the relationship between student educational objectives and retention/attrition rates. The study followed 4,502 students who came to the college for the first time in winter 1985 for five quarters, through winter 1986. The students were asked to indicate their educational objectives and their estimate of how long it would take them to achieve their objectives on their application form. Of the 2,617 students who provided information on their objectives and estimated length of stay, 416 expected to enroll for one quarter and did so (group A), 364 expected to enroll for nine or more quarters and enrolled for only one (group B), 239 students expected to enroll for fewer quarters than their actual enrollment (group C), and 255 expected to

enroll for five quarters or more and had enrolled for at least five quarters (group D). Study findings included the following: (1) group A came to NVCC mostly for job advancement (36.1%) and self-improvement (28.6%), had the highest percent of students holding a college degree prior to NVCC enrollment (43.8%), and generally performed well academically at NVCC, with 82.1% of the group earning a grade point average (GPA) of 2.0 or higher; (2) among group B students, the most common objectives were job advancement (30.7%) and career exploration (25.8%), 81.3% had no prior college degree, and 40% achieved less than a 2.0 GPA; (3) students in group C came to NVCC to prepare for transfer (29.3%) or for self-improvement (25.5%), 40% held a college degree, and 86.4% had a GPA of 2.0 or higher; and (4) 51.8% of the group D students came to NVCC to transfer, 82.3% had no prior degree, 33.7% were under 21 years of age, and 92% earned a GPA of 2.0 or higher.

Fawcett, L., and Hoglan, J. Clackamas Community College 1986 High School Marketing Survey. Oregon City, OR: Clackamas Community College, 1986. 19 pp. (ED 277 410)

A survey was conducted to gather information from high school juniors and seniors in the Clackamas Community College (CCC) District about their post-high school plans; the factors, people, and information sources most important in the college choice process; and student perceptions of CCC. A total of 1,758 completed surveys were received from nine area high schools. Study findings included the following: (1) 67.9% of the students planned to attend college or trade school immediately after high school, and 88.5% planned to attend college eventually; (2) students indicated that their parents had the most influence on their choice of college; (3) availability of a particular program of study was the most important factor in college choice; (4) a visit to a college and college publications were considered the most important sources of information about a college; and (5) in comparison with survey responses from the previous year, there was a significant increase in student's overall knowledge level about CCC, with 59.3% of the responding seniors having a moderate to high level of knowledge as opposed to 40.8% in 1985. Based on study findings, a series of recommendations concerning publicity and recruitment were developed. The survey instrument is appended.

Landis, J.T. Los Angeles Community College District Feeder High School Student Characteristics and Enrollment Patterns, 1983-1985. Los Angeles: Los Angeles Community College District. Office of Research, Planning and Development, 1985. 72 pp. (ED 272 252)

A study was conducted by the Los Angeles Community College District (LACCD) to examine rates of matriculation from the Los Angeles Unified School District's (LAUSD's) 64 high schools to the LACCD and to develop recommendations for expanding college-going rates. An analysis of enrollment and flow patterns revealed the following: (1) LAUSD high school students were 41% Hispanic, 29% White, 16% Black, and 11% Asian; (2) in fall 1984, 36% of California's 1984 graduates entered community colleges, but just 28% of LACCD feeder high school graduates entered community colleges; (3) some inner-city schools sent as few as 19% of their graduates to public postsecondary institutions, but some doubled that rate; (4) if a high school's students were predominately Asian or White, one half or more of its graduates enrolled in the postsecondary system; (5) outflow was greatest from small to mid-sized colleges bordering affluent suburban districts; and (6) the pool of high- and moderate-achieving students was declining twice as fast as the number of first-time freshmen. Based on study findings, recommendations concerning institutional image, outreach services, student educational planning, and curriculum were developed to rebuild matriculation rates.

Lucas, J.A. Student Characteristics as Compared to the Community Profile, Fall, 1985. [Research Report Series], Volume XV, No. 11. Palatine, IL: William Rainey Harper College. Office of Planning and Research, 1987. 32 pp. (ED 282 613)

In fall 1985, a study was conducted at William Rainey Harper College (WRHC) to provide a student profile for general information purposes, to gather data not available on the college's automated data file, and to analyze WRHC's marketing outreach. Surveys were mailed to

random samples of 500 credit degree students and 300 continuing education students. Response rates of 82% for degree credit student and 71% for continuing education students were obtained. Study findings included the following: (1) WRHS enrolled about 2.7% of the district population in degree credit programs, with the proportions of students in the day and evening programs stabilizing at 53% and 46%, respectively; (2) most of the demographic characteristics of students had remained fairly constant over the last 5 to 10 years, though the average age of continuing education students had consistently grown older; (3) fewer students were interested in bus transportation or car pooling each year; (4) when student enrollments dropped in 1984 and 1985, the decline seemed to affect equally all segments of the student population; (5) 17.5% of the students were assisted by employer contributions for their education; and (6) the major factors attracting students to WRHC continued to be friends and relatives, convenience, specific programs and offerings, and low cost. The survey instrument is appended.

Puyear, D. The Effect of a Reduction in Tuition on Enrollment, Fall 1986. Volume I: Summary and Report [and] Volume II: Appendices. Richmond: Virginia State Department of Community Colleges, 1987. 652 pp. (ED 277 411)

A study was conducted to determine the effect of the tuition reduction from $17.75 per quarter credit hour in 1985-86 to $17.00 per quarter credit hour for the 1986-87 academic year on enrollment in the Virginia Community College System during fall, 1986. The study involved a written survey of over 10,000 in-state students; the examination of actual fall quarter in-state enrollments from 1981 to 1985 in comparison with 1986; and interviews with selected students, faculty and employers. Study findings included the following: (1) in fall 1986, enrollment in the Virginia community colleges increased by 7.53%, while community college enrollment across the nation increased by only 2.5% and four-year college enrollment in Virginia increased by 1.3%; (2) about 15% of the student respondents said that the tuition reduction affected their decision to attend the community college; (3) over 8% reported that a higher tuition rate, which would have resulted if a special state appropriation had not been made, would have kept them from attending college at all; and (4) over 33% of all students reported receiving some sort of financial aid. Based on study findings, it was concluded that the tuition reduction had made an important contribution to the enrollment increase. Extensive appendices include the survey instrument, and survey results and enrollment analyses for the system as a whole and by campus.

San Diego Community College District. An Analysis of Declining Enrollment. San Diego, CA: San Diego Community College District. Research and Planning, 1986. 63 pp. (ED 279 386)

The San Diego Community College District's (SDCCD's) spring 1985 enrollment report indicated that enrollment was down nearly 22% from the previous spring, and that the decline in the number of black students (28%) was noticeably higher than the overall decline. To determine possible reasons for the decline, a sample of 1,500 of the 16,000 students who enrolled in fall 1984, but did not return in spring 1985 were surveyed. In addition, a more in-depth survey of non-returning black students (N=1,600) was conducted by mail and telephone. Study findings, based on response rates of 21.4% to the general survey and of 26% to the black student survey, included the following: (1) employment-related issues and financial concerns were the strongest factors contributing to the decline of the black student population; (2) while employment and finances were also of concern to the non=returning population as a whole, family commitments and transfer were of greater significance; (3) although tuition was not a primary factor, it did have significantly greater effects on Blacks, Hispanics, and students taking more than six units; and (4) nearly 50% of the non-returning students dropped out before the end of the fall semester. The survey instruments are appended.

Research and descriptive reports, curriculum and "how to" guides and manuals, conference papers and other unpublished works are submitted to ERIC by colleges, universities, research institutions, state agencies, and other education-related organizations and groups. The Clearinghouse invites materials dealing with any aspect of community/junior college

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COMMUNITY COLLEGE JOURNAL FOR RESEARCH AND PLANNING

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The COMMUNITY COLLEGE JOURNAL FOR RESEARCH AND PLANNING provides a forum for the exchange of information among members of the association and among professional colleagues in the field of research and planning. The Journal is multi-purpose and diverse in its articles and information; however, it is unified in its purpose to be of service to professionals working in the field of Community College research, management and planning.

The Journal is designed to provide an outlet for research and planners. It also serves as an information source for all elements of higher education interested in institutional management. The Journal meets a need to communicate the findings and achievements of research and planning professionals concerned with issues of importance to community colleges.

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All manuscripts will be reviewed and considered for publication. Manuscripts should be submitted in duplicate, double-spaced on 8 1/2 x 11 white bond and conform to the guidelines of the American Psychological Association Style Manual (3rd ed.), available from the American Psychological Association, 1200 17th St. N.W., Washington, DC 20036. Figures, charts and graphs should be submitted camera ready. Articles should serve the needs of community college research as stated in the purpose. Correspondence and manuscripts should be submitted to Edith Carter, Editor, Box 5781 Radford University, Radford, VA 24142.

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